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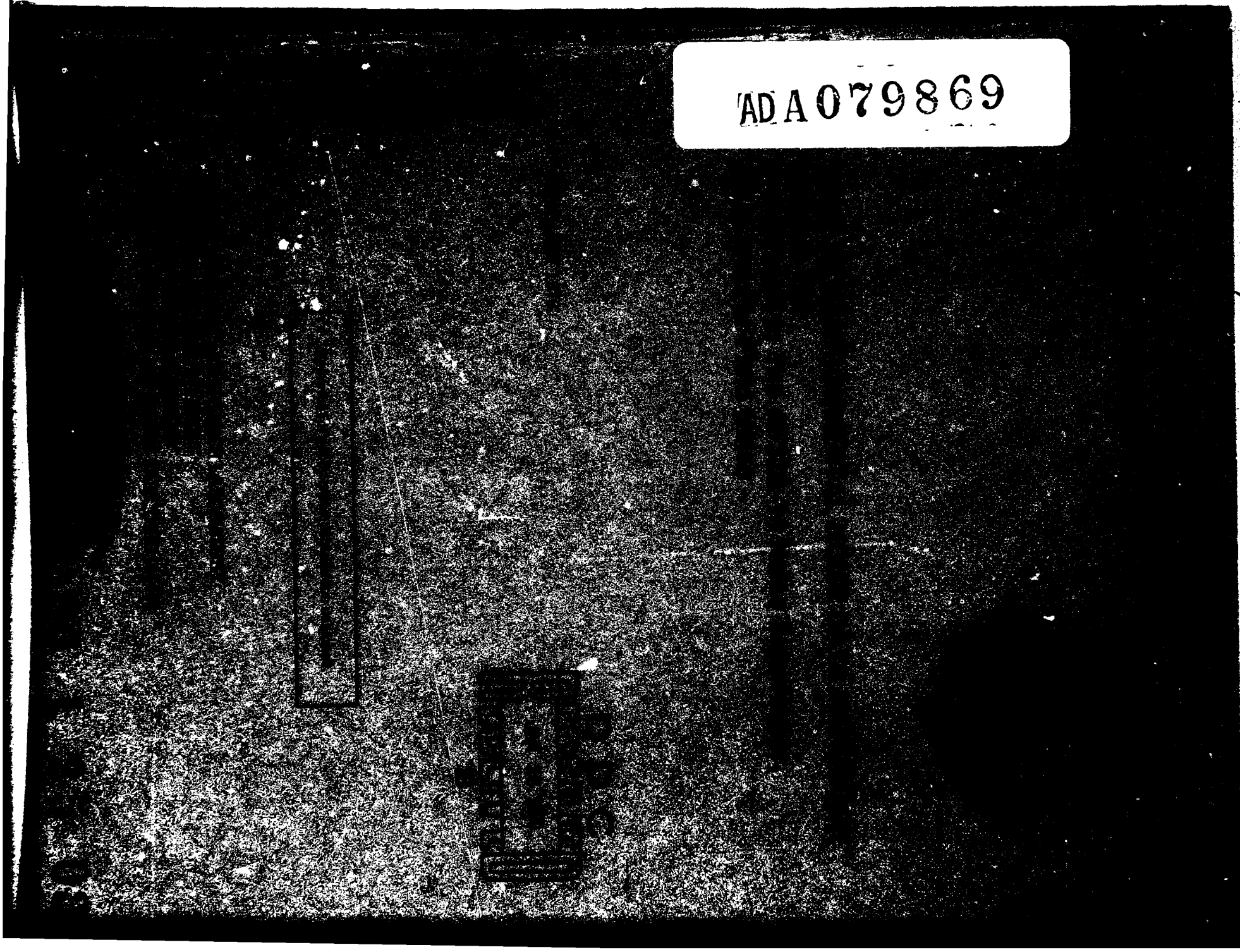

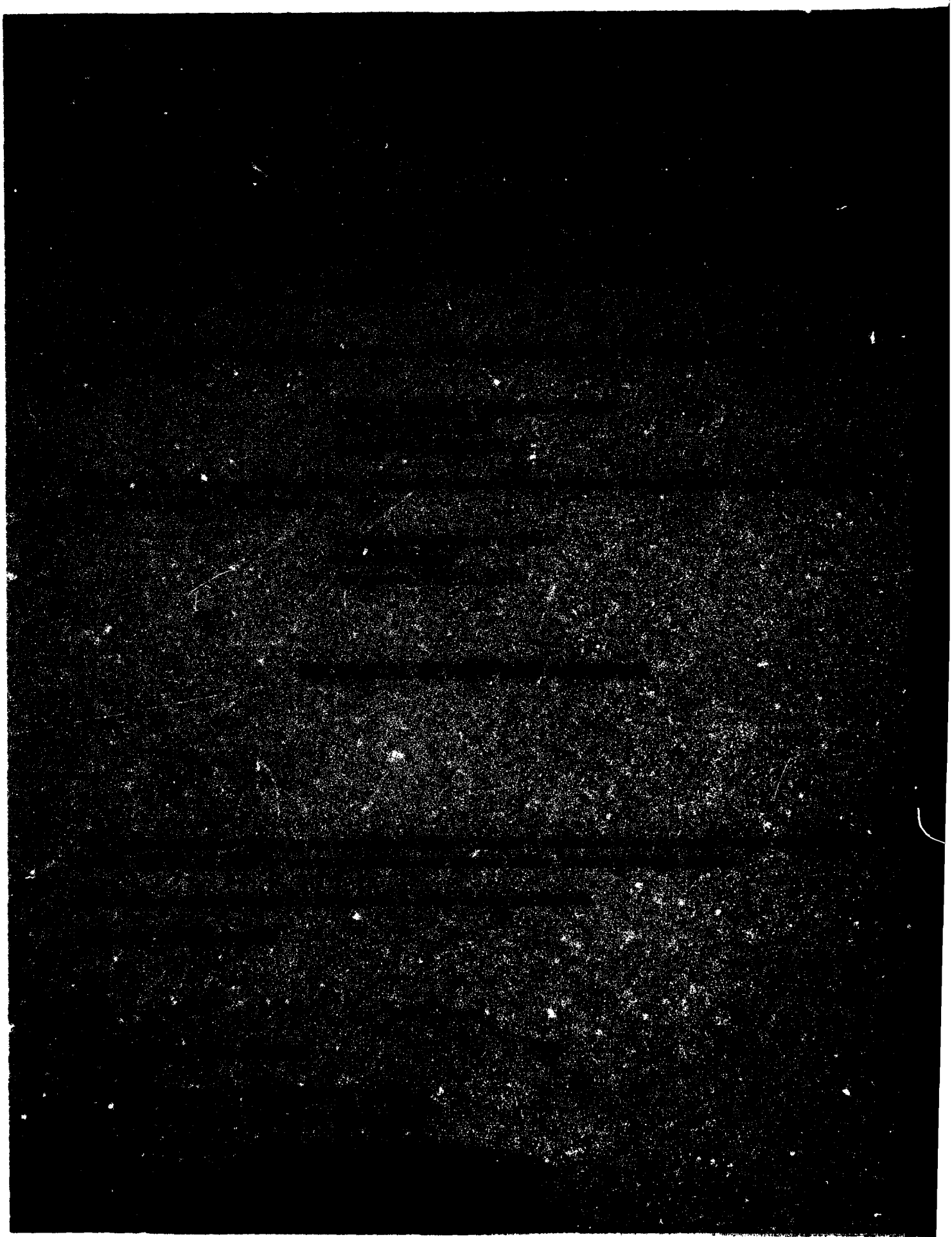

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The AF32A-14 noise suppressor is made by Koppers Environmental Elements Corporation for acoustical suppression of the F-4 aircraft. This report provides measured and extrapolated data defining the bioacoustic environments produced by this aircraft operating in this suppressor for three engine power configurations. Near-field data are reported for two locations in a wide variety of physical and psychoacoustic measures: overall and band sound

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pressure levels, C-weighted and A-weighted sound levels, preferred speech interference level, perceived noise level, and limiting times for total daily exposure of personnel with and without standard Air Force ear protectors. Far-field data measured at 19 locations are normalized to standard meteorological conditions and extrapolated from 75-8000 meters to derive sets of equal-value contours for these same seven acoustic measures as functions of angle and distance from the source. Refer to Volume 1 of this handbook, "USAF Bioenvironmental Noise Data Handbook, Vol 1: Organization, Content and Application", AMRL-TR-75-50(1) 1975, for discussion of the objective and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc.

# PREFACE

This report was prepared by the Biodynamic Environment Branch, Aerospace Medical Research Laboratory, under Project/Task 723107, Technology to Define and Assess Environmental Quality of Noise From Air Force Operations.

The author gratefully acknowledges Mr. John Cole and Mr. Robert Powell for their assistance in preparing this report, Mr. Jerry Speakman and Capt. Richard Gorman for their assistance in acquiring the raw data, Mr. Keith Kettler, Mr. Henry Mohlman and Mr. Fred Lampley of the University of Dayton for assistance in the mechanics of data processing, and Mrs. Peggy Massie for assistance in typing this report.

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# INTRODUCTION

The F-4 aircraft equipped with two General Electric J79-GE-17 engines functions as a long range, high altitude interceptor, long range attack, and close air support aircraft. This aircraft is manufactured by McDonnell-Douglas and is code named the Phantom II. The AF32A-14 noise suppressor is made by Koppers Environmental Elements Corporation to provide noise level reduction for all F-4 aircraft during ground runup operations.

This volume provides measured and extrapolated data defining bioacoustic environments produced by this aircraft in this suppressor system during ground runup operations. Such data are essential to evaluate ear protection requirements, limiting personnel exposure times, voice communication capabilities, and annoyance problems associated with ground runups of the F-4 aircraft operating in the AF32A-14 noise suppressor.

This volume is one of a series published by the Aerospace Medical Research Laboratory (AMRL) under the same report number (AMRL-TR-75-50) as a multi-volume handbook that quantifies the noise environments produced at flight ground crew locations and in surrounding communities by operations of Air Force aircraft and ground support equipment. The far-field, community-type noise data in the handbook describe the noise produced during *ground operations* of aircraft, ground support equipment, and other ground-based equipment or facilities.

Volume 1 of this handbook discusses the objectives and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc. Volume 2 provides a method and data for adjusting the handbook's far-field noise data, which are for standard meteorological conditions (15°C temperature, 70% rel humidity, 0.760 meters Hg barometric pressure), to derive comparable data for other meteorological conditions. *Refer to Volumes 1 and 2* (references 1 and 2) for such information because it is not repeated in other handbook volumes.

A cumulative index lists those aerospace systems contained in the handbook, and identifies the specific volumes containing each type of environmental noise data available (i.e., inflight/flight crew and passenger noise, near-field/ground crew noise, far-field/community noise). Volume numbers are assigned sequentially as individual volumes are published. This index is periodically updated as individual volumes are published and is available upon request from AMRL/BBE, Wright-Patterson AFB, OH 45433. Organizations on the distribution list for the handbook will automatically receive a copy of each updated index.

Direct any questions concerning the technical data in this report and other handbook volumes to: AMRL/BBE, Wright-Patterson AFB, OH 45433; AUTOVON 78-53675 or 78-53664; Commercial (513) 255-3675 or (513) 255-3664.

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1. Cole, John N., *USAF Bioenvironmental Noise Data Handbook Volume 1: Organization, Content and Application*, AMRL-TR-75-50 (1), Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975.

2. Cole, John N., *USAF Bioenvironmental Noise Data Handbook, Volume 2: Procedure to Evaluate Effects of Non-standard Meteorological Conditions on Far-Field Noise*, AMRL-TR-75-50 (2), AMRL, WPAFB, OH, 1975.

# NEAR-FIELD NOISE

## MEASUREMENTS

AMRL acquired near-field noise data on the AF32A-14 noise suppressor system during ground runup operations of the F-4 aircraft. For these tests the aircraft was located in the AF32A-14 noise suppressor at Nellis AFB with no significant reflecting surfaces in the vicinity except the ground plane. Table 1 gives the surface meteorological conditions and the four-engine power conditions. The ground-crew chief selected power conditions and near-field locations generally used during routine maintenance or engine runup for preflight checks.

At each near-field location a test engineer randomly moved a hand-held microphone in and around each location, probing all areas where a crew member's head would normally be located. He recorded all the noise samples on magnetic tape. During analysis of each sample he determined the one-third octave band root-mean-square sound pressure using a 4- or 8-second integration time to derive a power-averaged level for each location. Figure 1 shows the four near-field locations where ground crew are usually located for maintenance and/or preflight checkout operations. Estimates of noise levels at other locations are difficult in the near-field since the noise source is spatially distributed, i.e., not a point source. The noise levels at near-field locations can vary widely depending upon relative distances from each noise source (intake noise, exhaust noise, panel resonances, internal engine noise through the engine wall, etc.).

Table 1 lists the numeric/alphabetic designators used on the data pages in this report to identify the measurement locations and test conditions. For example, the designator 1/A means ground crew location 1 and test condition A.

## RESULTS

The measured data presented in Table 2 define the sound pressure levels (SPL) produced by the F-4 aircraft in the AF32A-14 noise suppressor at the two ground crew locations. This table includes overall, 1/3 octave band, and octave band levels. From these data one can calculate the variety of measures given in Table 3, which are widely used to assess the effects of noise on personnel and their performance.

All near-field data are the meteorological conditions at the time of test but are valid for all typical airbase meteorology because of the short sound propagation distances involved.

## TABLE 1

## MEASUREMENT LOCATIONS AND TEST CONDITIONS FOR NEAR-FIELD NOISE MEASUREMENTS

F-4 Aircraft Suppressor Ground Runup
Test #77-731-001

| | |
|---|---|
| *Ground Crew Location* | |
| 1 | Leak Check Position |
| 2 | Lookout Position |
| *Aircraft Engine Operation* | |
| A | Idle Power |
| B | 85% RPM |
| C | Military Power (98.5% RPM) |
| D | Afterburner Power |
| *Meteorology* | |
| Temperature | 34 C |
| Bar Pressure | .709 M Hg |
| Rel Humidity | 22 % |
| Wind — Speed | Calm |
| — Direction | Calm |

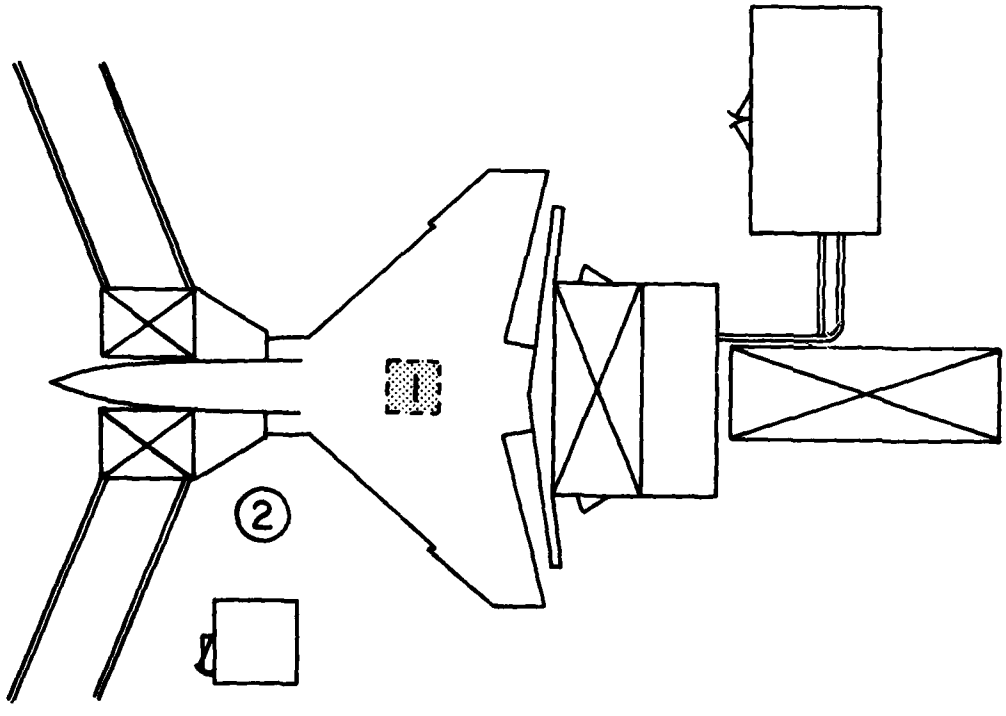



**Figure 1. Near-Field Measurement Locations**

## FAR-FIELD NOISE

### MEASUREMENTS

AMRL acquired both near and far-field data during a 1- 2-hour test period, thus keeping similar meteorological conditions. Figure 2 shows the ground runup pad, ground cover, aircraft orientation and the 19 microphone measurement sites on a semicircle. The center of the 100 meter radius semicircle used in surveying the AF32A-14 suppressor was on the ground directly below the center of the exhaust stack.

Table 4 provides cockpit readouts of engine characteristics (% RPM, fuel flow, etc.) for each power setting used in the far-field tests. Also listed in this table are the surface meteorological conditions during data acquisition.

All microphone measurement sites are in the acoustic far-field of their source where the sound wave-fronts spherically diverge and the noise source may be regarded as a point source.

A portable microphone/tape-recorder system was used to sequentially record the noise at each far-field location. The microphone was attached to a hand held pole, pointed at the source (0° angle of incidence) and vertically scanned from 0.5 to 3 meters for a period of 5-10 seconds during data acquisition at each microphone location. These samples were then time-integrated to derive a root-mean-square sound pressure level. Vertical scanning and time-integrating together reduce anomalies frequently present in data acquired by a fixed height microphone.

### RESULTS

Table 5 lists the overall and 1/3 octave band SPL measured at the far-field locations under meteorological conditions at the time of the test. Data in all other figures and tables are based on these levels. These data were normalized to 100 meters distance and standard meteorological conditions (15°C temperature, 70% relative humidity, 0.760 meter Hg barometric pressure) and used to derive the graphic data in Figure 3 which provides a compact summary of the far-field noise characteristics of the F-4 aircraft operating in the AF32A-14 noise suppressor in a standard format.

Estimates of the noise levels for intermediate power settings (e.g., 90% RPM) and/or different number of engines operating (e.g., single engine) can be determined as explained in Volume 1 of this handbook.

Figures 4 through 10 are sets of equal noise contours describing seven different measures of noise as a function of angle and distance from the source for standard day meteorology. They are respectively, overall sound pressure level, C-weighted sound level, A-weighted sound level, perceived noise level, speech interference level, permissible exposure times for personnel and octave band sound pressure levels.

Data excessively influenced by spurious background/electronic noise were eliminated from all figures and tables.

Test personnel performed noise surveys during quiet periods when the background noise was minimal, e.g., early in the morning when no other aircraft or engine test stands were operating. Data eliminated because they were near the background/electronic noise were generally not significant because the levels were so low.

Volume 2 of the handbook describes the influence of meteorology on far-field noise environments, and provides, if required, the factors necessary to adjust the handbook's standard meteorological day data.

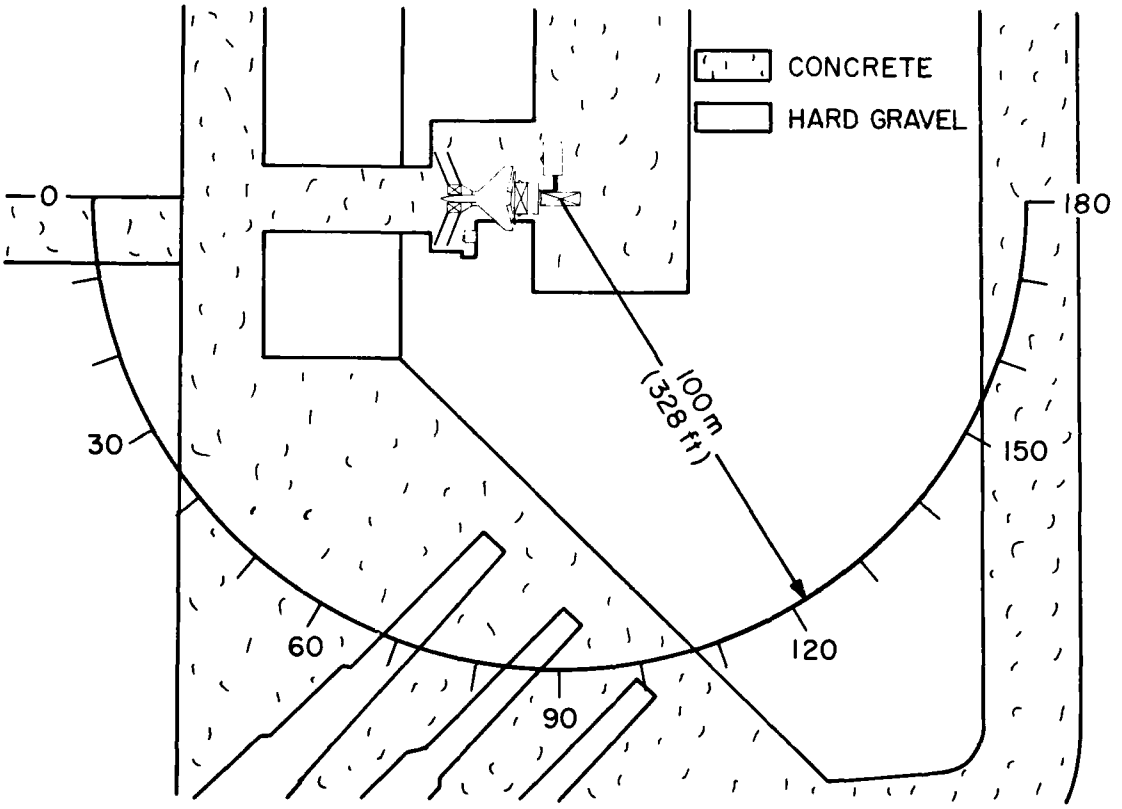



**Figure 2. Far-Field Measurement Locations at Nellis AFB, NV**

TABLE: 2 MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND

IDENTIFICATION:
OMEGA 3.2
TEST 77-731-001
RUN 01
14 SEP 78
PAGE F1

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF/32A-14 SUPPRESSOR
GROUND CREW
NEAR-FIELD NOISE LEVELS

OPERATION:

| FREQ (HZ) | LOCATION/CONDITION 1/A | 2/A | 1/B | 2/B | 1/C | 2/C | 1/D | 2/D |
|---|---|---|---|---|---|---|---|---|
| 25 | 90 | 77 | 97 | 86 | 102 | 93 | 112 | 101 |
| 31.5 | 96 | 79 | 90 | 82 | 94 | 92 | 102 | 95 |
| 40 | 101 | 78 | 94 | 79 | 96 | 85 | 102 | 91 |
| 50 | 96 | 75 | 93 | 78 | 93 | 81 | 104 | 92 |
| 63 | 88 | 70 | 93 | 75 | 93 | 81 | 98 | 87 |
| 80 | 94 | 79 | 92 | 78 | 95 | 82 | 99 | 87 |
| 100 | 88 | 72 | 101 | 81 | 97 | 82 | 101 | 89 |
| 125 | 91 | 72 | 102 | 82 | 101 | 86 | 106 | 93 |
| 160 | 94 | 72 | 105 | 84 | 103 | 85 | 113 | 92 |
| 200 | 85 | 69 | 99 | 84 | 98 | 86 | 104 | 90 |
| 250 | 90 | 70 | 102 | 86 | 104 | 90 | 108 | 94 |
| 315 | 87 | 71 | 110 | 84 | 106 | 85 | 110 | 89 |
| 400 | 93 | 75 | 104 | 82 | 104 | 89 | 109 | 92 |
| 500 | 88 | 79 | 103 | 85 | 106 | 91 | 110 | 95 |
| 630 | 88 | 78 | 100 | 88 | 107 | 91 | 112 | 95 |
| 800 | 90 | 77 | 101 | 91 | 109 | 93 | 113 | 95 |
| 1000 | 89 | 77 | 102 | 91 | 107 | 93 | 113 | 95 |
| 1250 | 91 | 77 | 102 | 90 | 107 | 94 | 113 | 95 |
| 1600 | 95 | 82 | 103 | 93 | 108 | 95 | 114 | 97 |
| 2000 | 98 | 81 | 105 | 93 | 108 | 94 | 113 | 94 |
| 2500 | 93 | 81 | 105 | 93 | 108 | 94 | 112 | 94 |
| 3150 | 92 | 81 | 103 | 92 | 107 | 95 | 111 | 95 |
| 4000 | 92 | 81 | 103 | 93 | 107 | 96 | 111 | 97 |
| 5000 | 91 | 80 | 101 | 92 | 105 | 94 | 107 | 95 |
| 6300 | 87 | 76 | 100 | 92 | 104 | 93 | 106 | 94 |
| 8000 | 86 | 75 | 100 | 91 | 102 | 92 | 103 | 93 |
| 10000 | 86 | 73 | 98 | 90 | 100 | 90 | 102 | 91 |
| OVERALL | 107 | 92 | 117 | 103 | 119 | 106 | 124 | 108 |

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: 2 MEASURED SOUND PRESSURE LEVEL (DB)
OCTAVE BAND

IDENTIFICATION:
OMEGA 3.2
TEST 77-731-001
RUN 01

14 SEP 78

PAGE J1

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF/32A-14 SUPPRESSOR
GROUND CREW
NEAR-FIELD NOISE LEVELS

OPERATION:

| FREQ (HZ) | LOCATION/CONDITION 1/A | 2/A | 1/B | 2/B | 1/C | 2/C | 1/D | 2/D |
|---|---|---|---|---|---|---|---|---|
| 31.5 | 102 | 83 | 99 | 88 | 104 | 96 | 113 | 102 |
| 63 | 98 | 81 | 98 | 82 | 98 | 86 | 106 | 94 |
| 125 | 96 | 77 | 108 | 87 | 106 | 89 | 114 | 96 |
| 250 | 93 | 75 | 111 | 89 | 108 | 92 | 113 | 96 |
| 500 | 95 | 82 | 107 | 90 | 111 | 95 | 115 | 99 |
| 1000 | 95 | 82 | 106 | 95 | 112 | 98 | 117 | 99 |
| 2000 | 100 | 86 | 109 | 98 | 113 | 99 | 117 | 100 |
| 4000 | 96 | 85 | 107 | 97 | 111 | 100 | 115 | 100 |
| 8000 | 91 | 80 | 104 | 96 | 107 | 96 | 108 | 98 |
| OVERALL | 107 | 92 | 117 | 103 | 119 | 106 | 124 | 108 |

TABLE: 3 MEASURES OF HUMAN NOISE EXPOSURE

IDENTIFICATION:
OMEGA 3.2
TEST 77-731-001
RUN 01
14 SEP 78
PAGE H1

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF/32A-14 SUPPRESSOR
GROUND CREW
NEAR-FIELD NOISE LEVELS

OPERATION:

| | LOCATION/CONDITION | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1/A | 2/A | 1/B | 2/B | 1/C | 2/C | 1/D | 2/D |
| **HAZARD/PROTECTION** | | | | | | | | |
| C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DBC) AT EAR | | | | | | | | |
| A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DBA) AT EAR | | | | | | | | |
| MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) | | | | | | | | |
| NO PROTECTION | | | | | | | | |
| OASLC | 106 | 91 | 116 | 103 | 119 | 105 | 123 | 107 |
| OASLA | 104 | 91 | 115 | 103 | 119 | 105 | 123 | 106 |
| T | 15 | 143 | 2.2 | 18 | P | 13 | P | 11 |
| MINIMUM QPL EAR MUFFS | | | | | | | | |
| OASLA* | 80 | 65 | 92 | 76 | 93 | 79 | 98 | 82 |
| T | 960 | 960 | 120 | 960 | 101 | 960 | 42 | 679 |
| AMERICAN OPTICAL 1700 EAR MUFFS | | | | | | | | |
| OASLA* | 76 | 60 | 87 | 71 | 87 | 73 | 92 | 76 |
| T | 960 | 960 | 285 | 960 | 285 | 960 | 120 | 960 |
| V-51R EAR PLUGS | | | | | | | | |
| OASLA* | 76 | 63 | 88 | 75 | 92 | 77 | 96 | 79 |
| T | 960 | 960 | 240 | 960 | 120 | 960 | 60 | 960 |
| AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS | | | | | | | | |
| OASLA* | 63 | 49 | 74 | 62 | 78 | 64 | 83 | 66 |
| T | 960 | 960 | 960 | 960 | 960 | 960 | 571 | 960 |
| H-133 GROUND COMMUNICATION UNIT | | | | | | | | |
| OASLA* | 77 | 64 | 87 | 76 | 91 | 78 | 95 | 79 |
| T | 960 | 960 | 285 | 960 | 143 | 960 | 71 | 960 |
| **COMMUNICATION** | | | | | | | | |
| PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB) | | | | | | | | |
| PSIL | 97 | 83 | 107 | 94 | 112 | 97 | 117 | 99 |
| **ANNOYANCE** | | | | | | | | |
| PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PNDB) | | | | | | | | |
| TONE CORRECTION (C IN DB) | | | | | | | | |
| PNLT | 119 | 105 | 130 | 117 | 132 | 120 | 137 | 121 |
| C | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 |

* BASED ON CALCULATED SPL SPECTRUM UNDER PROTECTIVE DEVICE.
P ADDITIONAL EAR PROTECTION REQUIRED.

## TABLE 4

## TEST CONDITIONS FOR FAR-FIELD NOISE MEASUREMENTS

F-4 Aircraft In Tne AF32A-14 Noise Suppressor, Ground Runup
Nellis AFB, NV, Test #77-731-001

*Aircraft Engine Operation*

| | |
|---|---|
| 85% RPM | One Engine<br>85 % RPM<br>400 °C EGT<br>2850 LBS/HR, FF |
| Military Power | One Engine<br>98.5 % RPM<br>660 °C EGT<br>7800 LBS/HR, FF |
| Afterburner Power | One Engine<br>98.5 % RPM<br>660 °C EGT<br>44,500 LBS/HR, FF |

*Meteorology*

| | |
|---|---|
| Temperature | 34 C |
| Bar Pressure | .709 M Hg |
| Rel Humidity | 22 % |
| Wind — Speed | Calm |
| — Direction | Calm |

TABLE: 5 MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
ENGINE RUNUP 85% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 34 C
BAR PRESS = .709 M HG
REL HUMID = 22 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 01
14 SEP 78
PAGE 2

| FREQ (HZ) | ANGLE (DEGREES) 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 75< | 76< | 73< | 72< | 75< | 77< | 74< | 76< | 75< | 73< | 73< | 72< | 78 | 74< | 84 | 73< | 74< | 75< | 73< |
| 31.5 | 74 | 73 | 70< | 71< | 72< | 72 | 70< | 71< | 70< | 69< | 70< | 71< | 74 | 74 | 79 | 71< | 71< | 73 | 72 |
| 40 | 71< | 71< | 68< | 71< | 75 | 77 | 72 | 74 | 73 | 72 | 71< | 70< | 73 | 74 | 83 | 74 | 75 | 75 | 73 |
| 50 | 70 | 69< | 66< | 69< | 71 | 74 | 69< | 72 | 72 | 68< | 69< | 71 | 71 | 73 | 83 | 72 | 72 | 73 | 72 |
| 63 | 71< | 68< | 67< | 67< | 70< | 70< | 70< | 70< | 71< | 68< | 71< | 70< | 73 | 75 | 79 | 73 | 73 | 73 | 73 |
| 80 | 69< | 65< | 65< | 67< | 70< | 71 | 69< | 71 | 71 | 65< | 67< | 71 | 73 | 74 | 81 | 74 | 71 | 69< | 69< |
| 100 | 72 | 68 | 69 | 70 | 72 | 73 | 73 | 71 | 71 | 67 | 68 | 69 | 74 | 74 | 80 | 72 | 72 | 72 | 71 |
| 125 | 70 | 67 | 70 | 70 | 72 | 71 | 69 | 69 | 70 | 68 | 68 | 70 | 72 | 72 | 77 | 72 | 73 | 71 | 71 |
| 160 | 75 | 70 | 70 | 70 | 72 | 69 | 69 | 69 | 69 | 71 | 73 | 72 | 74 | 73 | 75 | 76 | 74 | 73 | 73 |
| 200 | 70 | 69 | 70 | 71 | 71 | 71 | 72 | 71 | 69 | 70 | 71 | 70 | 74 | 74 | 76 | 75 | 75 | 72 | 71 |
| 250 | 75 | 72 | 70 | 72 | 72 | 72 | 72 | 70 | 69 | 69 | 72 | 70 | 71 | 72 | 73 | 74 | 75 | 71 | 72 |
| 315 | 72 | 72 | 72 | 72 | 73 | 78 | 74 | 73 | 71 | 70 | 73 | 72 | 74 | 72 | 72 | 74 | 73 | 74 | 73 |
| 400 | 66 | 65 | 67 | 67 | 67 | 67 | 67 | 65 | 65 | 64 | 66 | 66 | 68 | 68 | 69 | 70 | 71 | 69 | 68 |
| 500 | 67 | 66 | 68 | 68 | 66 | 70 | 68 | 64 | 65 | 63 | 62 | 62 | 65 | 66 | 67 | 66 | 66 | 65 | 64 |
| 630 | 63 | 62 | 64 | 64 | 65 | 69 | 66 | 64 | 65 | 61 | 62 | 61 | 63 | 62 | 64 | 64 | 64 | 62 | 60 |
| 800 | 66 | 62 | 64 | 66 | 67 | 70 | 66 | 64 | 63 | 61 | 61 | 60 | 60 | 60 | 66 | 62 | 62 | 60 | 56 |
| 1000 | 69 | 64 | 65 | 67 | 70 | 71 | 67 | 63 | 63 | 60 | 61 | 60 | 60 | 59 | 66 | 61 | 58 | 56 | 55 |
| 1250 | 67 | 62 | 64 | 66 | 70 | 70 | 65 | 63 | 61 | 60 | 61 | 58 | 60 | 59 | 63 | 62 | 58 | 58 | 57 |
| 1600 | 65 | 62 | 64 | 65 | 66 | 67 | 65 | 61 | 60 | 59 | 59 | 56 | 60 | 61 | 64 | 64 | 62 | 61 | 59 |
| 2000 | 70 | 65 | 66 | 66 | 66 | 67 | 64 | 62 | 60 | 61 | 61 | 60 | 63 | 64 | 66 | 67 | 66 | 65 | 62 |
| 2500 | 70 | 65 | 65 | 67 | 67 | 66 | 64 | 62 | 61 | 62 | 61 | 61 | 64 | 65 | 66 | 68 | 68 | 67 | 64 |
| 3150 | 67 | 62 | 62 | 65 | 65 | 67 | 64 | 60 | 59 | 60 | 59 | 61 | 64 | 65 | 65 | 69 | 71 | 70 | 66 |
| 4000 | 68 | 59 | 61 | 65 | 65 | 67 | 62 | 61 | 59 | 63 | 59 | 60 | 63 | 63 | 65 | 67 | 66 | 68 | 63 |
| 5000 | 66 | 56 | 59 | 62 | 63 | 64 | 60 | 58 | 56 | 57 | 55 | 55 | 59 | 60 | 61 | 64 | 61 | 63 | 60 |
| 6300 | 63 | 53 | 55 | 58 | 58 | 61 | 55 | 54 | 52 | 54 | 51 | 52 | 55 | 53 | 56 | 58 | 55 | 59 | 55 |
| 8000 | 57 | 47 | 50 | 52 | 52 | 55 | 50 | 48 | 45 | 47 | 45 | 45 | 48 | 49 | 48 | 54 | 53 | 55 | 52 |
| 10000 | 55 | 44 | 48 | 47 | 46 | 47 | 43 | 40< | 37< | 39< | 37< | 36< | 39< | 41< | 40< | 46 | 48 | 53 | 52 |
| OVERALL | 84 | 82 | 82 | 83 | 84 | 86 | 83 | 83 | 83 | 81 | 82 | 82 | 85 | 85 | 91 | 85 | 85 | 84 | 83 |

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: 5

MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
MILITARY POWER 98.5% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 34 C
BAR PRESS = .709 M HG
REL HUMID = 22 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 02
14 SEP 78
PAGE 2

| FREQ (HZ) | ANGLE (DEGREES) 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 83 | 83 | 82 | 84 | 83 | 84 | 86 | 86 | 85 | 85 | 84 | 81 | 79 | 82 | 84 | 86 | 85 | 85 | 82 |
| 31.5 | 81 | 80 | 80 | 80 | 80 | 79 | 79 | 81 | 81 | 79 | 79 | 80 | 81 | 83 | 83 | 82 | 81 | 82 | 80 |
| 40 | 78 | 78 | 77 | 78 | 77 | 77 | 79 | 82 | 80 | 77 | 78 | 78 | 79 | 81 | 82 | 80 | 82 | 81 | 82 |
| 50 | 73 | 73 | 72 | 73 | 73 | 74 | 76 | 76 | 77 | 75 | 76 | 75 | 76 | 79 | 78 | 79 | 79 | 79 | 80 |
| 63 | 75 | 74 | 70< | 72 | 77 | 76 | 77 | 78 | 78 | 78 | 78 | 77 | 75 | 78 | 79 | 79 | 78 | 79 | 80 |
| 80 | 76 | 73 | 70< | 75 | 78 | 77 | 79 | 77 | 79 | 77 | 78 | 76 | 78 | 79 | 79 | 80 | 77 | 79 | 78 |
| 100 | 73 | 73 | 73 | 76 | 77 | 77 | 78 | 78 | 80 | 76 | 77 | 78 | 79 | 81 | 80 | 80 | 80 | 79 | 77 |
| 125 | 73 | 73 | 74 | 77 | 79 | 82 | 78 | 78 | 80 | 76 | 77 | 77 | 76 | 81 | 79 | 81 | 80 | 76 | 76 |
| 160 | 75 | 75 | 72 | 73 | 77 | 76 | 75 | 76 | 79 | 77 | 79 | 77 | 77 | 80 | 80 | 80 | 78 | 78 | 76 |
| 200 | 74 | 74 | 71 | 73 | 77 | 78 | 78 | 75 | 78 | 79 | 79 | 76 | 78 | 80 | 80 | 80 | 78 | 80 | 75 |
| 250 | 80 | 78 | 73 | 74 | 76 | 76 | 79 | 80 | 77 | 80 | 79 | 80 | 78 | 78 | 80 | 80 | 81 | 81 | 78 |
| 315 | 78 | 76 | 74 | 75 | 77 | 80 | 81 | 77 | 77 | 78 | 79 | 78 | 77 | 78 | 78 | 79 | 79 | 79 | 75 |
| 400 | 78 | 76 | 74 | 74 | 76 | 78 | 79 | 77 | 76 | 78 | 77 | 77 | 78 | 77 | 78 | 78 | 79 | 79 | 75 |
| 500 | 75 | 76 | 74 | 73 | 74 | 76 | 75 | 75 | 74 | 76 | 74 | 73 | 73 | 75 | 75 | 75 | 76 | 75 | 72 |
| 630 | 73 | 73 | 72 | 72 | 73 | 74 | 73 | 74 | 75 | 74 | 73 | 71 | 72 | 72 | 72 | 71 | 73 | 72 | 69 |
| 800 | 74 | 76 | 74 | 74 | 76 | 76 | 76 | 75 | 75 | 72 | 72 | 70 | 70 | 71 | 71 | 72 | 71 | 70 | 69 |
| 1000 | 74 | 75 | 73 | 74 | 75 | 74 | 74 | 73 | 73 | 71 | 70 | 69 | 69 | 67 | 67 | 68 | 67 | 66 | 65 |
| 1250 | 72 | 74 | 72 | 72 | 74 | 74 | 73 | 72 | 73 | 69 | 69 | 68 | 68 | 69 | 68 | 70 | 68 | 67 | 67 |
| 1600 | 70 | 74 | 71 | 71 | 72 | 72 | 72 | 71 | 71 | 67 | 68 | 67 | 68 | 68 | 69 | 69 | 70 | 69 | 67 |
| 2000 | 71 | 75 | 71 | 71 | 71 | 72 | 71 | 69 | 69 | 66 | 66 | 66 | 67 | 69 | 69 | 70 | 70 | 70 | 69 |
| 2500 | 71 | 73 | 69 | 69 | 68 | 68 | 68 | 67 | 66 | 64 | 65 | 67 | 66 | 69 | 70 | 70 | 69 | 70 | 70 |
| 3150 | 71 | 73 | 70 | 71 | 69 | 70 | 70 | 68 | 66 | 64 | 66 | 67 | 68 | 69 | 71 | 70 | 70 | 72 | 71 |
| 4000 | 69 | 72 | 68 | 67 | 67 | 69 | 68 | 68 | 67 | 68 | 66 | 68 | 68 | 70 | 71 | 70 | 71 | 72 | 70 |
| 5000 | 67 | 70 | 64 | 63 | 64 | 66 | 64 | 64 | 63 | 63 | 62 | 63 | 64 | 64 | 65 | 64 | 64 | 66 | 64 |
| 6300 | 62 | 65 | 60 | 59 | 60 | 62 | 60 | 59 | 59 | 58 | 57 | 58 | 58 | 60 | 61 | 60 | 60 | 62 | 60 |
| 8000 | 59 | 60 | 55 | 54 | 55 | 57 | 54 | 54 | 53 | 52 | 51 | 51 | 52 | 53 | 53 | 54 | 54 | 57 | 57 |
| 10000 | 50 | 52 | 47 | 46 | 46 | 48 | 45 | 44 | 44 | 42< | 42< | 42< | 43 | 43 | 42< | 44 | 46 | 52 | 54 |
| OVERALL | 90 | 90 | 88 | 89 | 90 | 91 | 91 | 91 | 91 | 90 | 90 | 89 | 89 | 92 | 92 | 92 | 92 | 92 | 90 |

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE 5: MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 100 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 03
14 SEP 78
PAGE 2

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 34 C
BAR PRESS = .709 M HG
REL HUMID = 22 %

| FREQ (HZ) | ANGLE (DEGREES) 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 96 | 95 | 93 | 92 | 92 | 92 | 94 | 95 | 94 | 91 | 90 | 86 | 90 | 94 | 95 | 96 | 96 | 97 | 95 |
| 31.5 | 86 | 85 | 84 | 85 | 85 | 85 | 86 | 85 | 85 | 84 | 83 | 84 | 86 | 87 | 89 | 87 | 86 | 87 | 86 |
| 40 | 84 | 83 | 82 | 83 | 82 | 83 | 85 | 84 | 84 | 83 | 83 | 81 | 81 | 85 | 85 | 84 | 85 | 85 | 87 |
| 50 | 86 | 85 | 85 | 86 | 86 | 87 | 85 | 84 | 83 | 82 | 83 | 85 | 84 | 86 | 85 | 83 | 84 | 82 | 83 |
| 63 | 80 | 79 | 78 | 80 | 82 | 82 | 84 | 84 | 83 | 81 | 81 | 81 | 82 | 86 | 83 | 82 | 83 | 80 | 82 |
| 80 | 80 | 78 | 76 | 79 | 82 | 83 | 84 | 86 | 83 | 82 | 82 | 84 | 84 | 86 | 85 | 81 | 81 | 80 | 80 |
| 100 | 78 | 78 | 76 | 78 | 81 | 83 | 84 | 86 | 85 | 82 | 86 | 86 | 87 | 88 | 85 | 84 | 84 | 81 | 81 |
| 125 | 78 | 77 | 79 | 81 | 83 | 82 | 81 | 86 | 83 | 80 | 83 | 86 | 87 | 86 | 83 | 81 | 80 | 81 | 81 |
| 160 | 79 | 76 | 76 | 79 | 84 | 84 | 86 | 86 | 82 | 81 | 81 | 84 | 85 | 84 | 82 | 83 | 83 | 81 | 80 |
| 200 | 78 | 77 | 77 | 77 | 80 | 81 | 81 | 85 | 83 | 81 | 82 | 82 | 86 | 84 | 85 | 84 | 84 | 81 | 80 |
| 250 | 83 | 79 | 76 | 79 | 81 | 82 | 86 | 85 | 83 | 82 | 81 | 81 | 83 | 83 | 83 | 82 | 83 | 79 | 80 |
| 315 | 79 | 75 | 76 | 77 | 79 | 83 | 85 | 84 | 82 | 82 | 81 | 83 | 83 | 82 | 81 | 81 | 82 | 81 | 80 |
| 400 | 78 | 74 | 75 | 76 | 77 | 81 | 83 | 81 | 80 | 77 | 79 | 79 | 81 | 82 | 82 | 82 | 81 | 82 | 78 |
| 500 | 79 | 73 | 74 | 75 | 77 | 78 | 80 | 82 | 79 | 76 | 77 | 76 | 78 | 79 | 79 | 78 | 80 | 79 | 76 |
| 630 | 78 | 73 | 75 | 76 | 78 | 78 | 81 | 80 | 79 | 78 | 77 | 76 | 77 | 78 | 77 | 77 | 78 | 77 | 77 |
| 800 | 77 | 74 | 76 | 77 | 80 | 79 | 81 | 82 | 79 | 78 | 77 | 76 | 77 | 76 | 77 | 75 | 75 | 75 | 76 |
| 1000 | 78 | 74 | 76 | 79 | 80 | 79 | 80 | 79 | 78 | 77 | 75 | 74 | 74 | 74 | 75 | 74 | 74 | 72 | 72 |
| 1250 | 74 | 70 | 74 | 76 | 76 | 77 | 77 | 77 | 76 | 74 | 74 | 73 | 73 | 73 | 74 | 74 | 73 | 72 | 71 |
| 1600 | 72 | 71 | 74 | 76 | 76 | 76 | 76 | 77 | 75 | 72 | 71 | 70 | 71 | 74 | 74 | 74 | 74 | 74 | 73 |
| 2000 | 72 | 71 | 73 | 74 | 75 | 74 | 73 | 74 | 73 | 70 | 69 | 69 | 71 | 72 | 72 | 72 | 72 | 73 | 71 |
| 2500 | 70 | 71 | 72 | 73 | 73 | 71 | 70 | 72 | 70 | 68 | 69 | 70 | 70 | 73 | 73 | 72 | 74 | 73 | 71 |
| 3150 | 71 | 71 | 73 | 75 | 73 | 73 | 72 | 71 | 70 | 69 | 70 | 71 | 73 | 73 | 73 | 72 | 74 | 72 | 71 |
| 4000 | 67 | 67 | 69 | 71 | 71 | 71 | 68 | 70 | 69 | 70 | 69 | 70 | 71 | 72 | 72 | 71 | 73 | 72 | 69 |
| 5000 | 65 | 65 | 66 | 68 | 68 | 68 | 66 | 66 | 66 | 65 | 64 | 66 | 67 | 67 | 68 | 67 | 68 | 66 | 65 |
| 6300 | 61 | 61 | 62 | 64 | 64 | 64 | 61 | 63 | 62 | 62 | 61 | 62 | 63 | 62 | 63 | 63 | 63 | 61 | 60 |
| 8000 | 56 | 55 | 57 | 58 | 58 | 60 | 55 | 56 | 55 | 54 | 54 | 54 | 55 | 56 | 58 | 56 | 57 | 55 | 54 |
| 10000 | 49 | 48 | 50 | 51 | 50 | 51 | 47 | 46 | 46 | 45 | 44 | 44 | 45 | 46 | 50 | 47 | 50 | 49 | 49 |
| OVERALL | 98 | 97 | 95 | 95 | 96 | 97 | 98 | 99 | 97 | 95 | 95 | 95 | 97 | 98 | 98 | 98 | 98 | 98 | 97 |

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3

DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
ENGINE RUNUP 85% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 01
14 SEP 78
PAGE 6

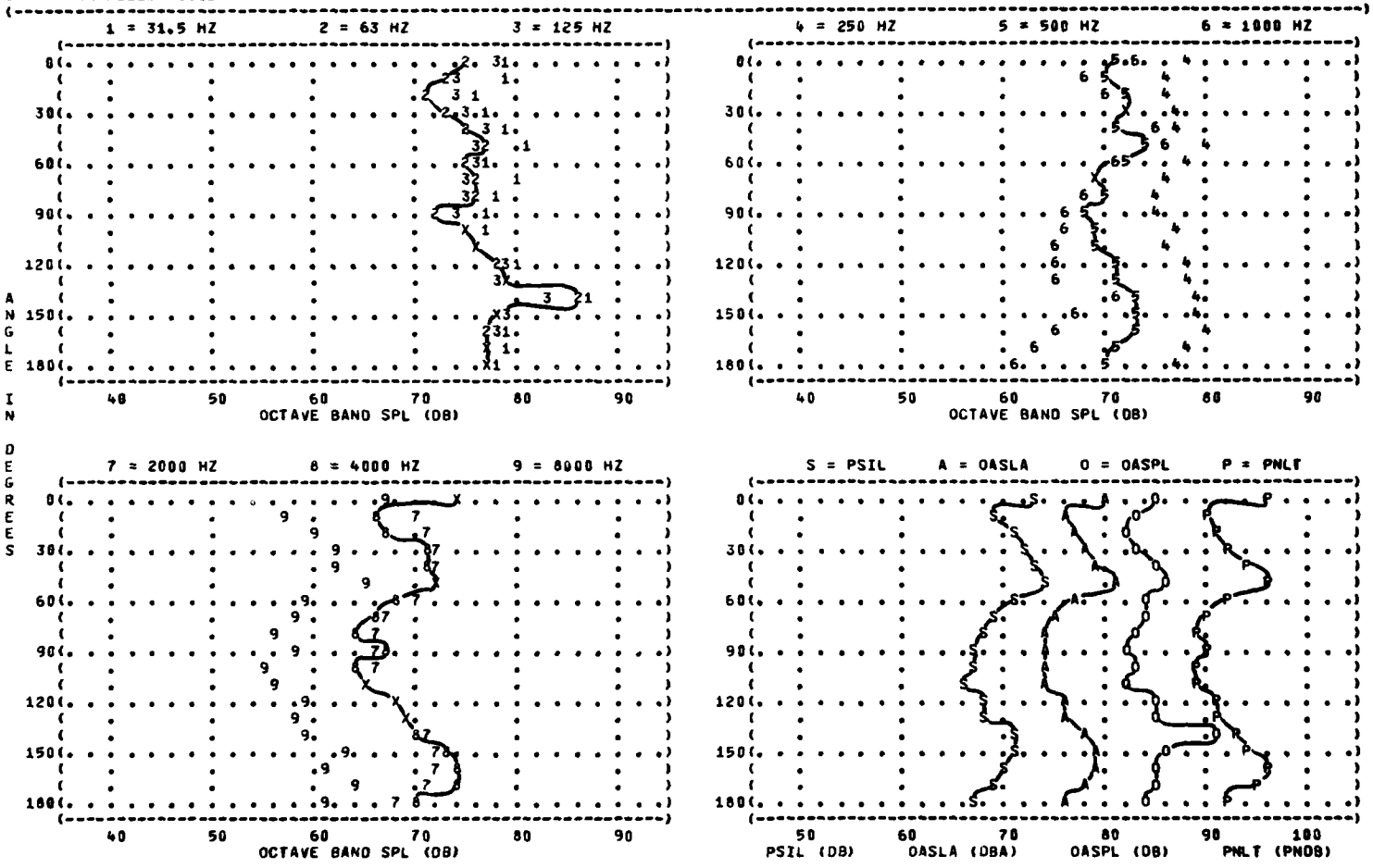


FIGURE 3 NORMALIZED FARFIELD NOISE LEVELS

DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
MILITARY POWER 98.5% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 02
14 SEP 78
PAGE 6

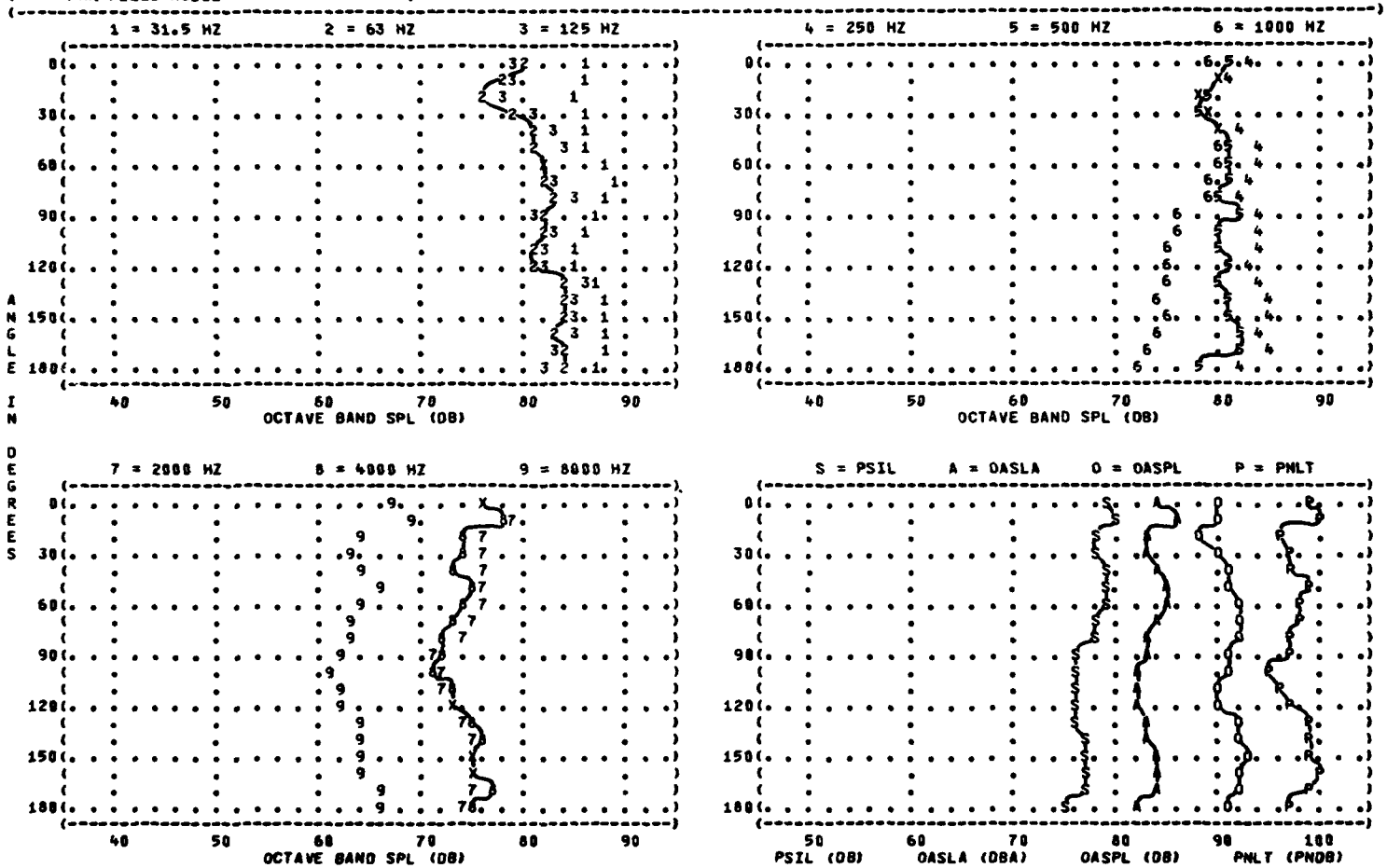


FIGURE: 3 NORMALIZED FARFIELD NOISE LEVELS

DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 03
14 SEP 78
PAGE 6

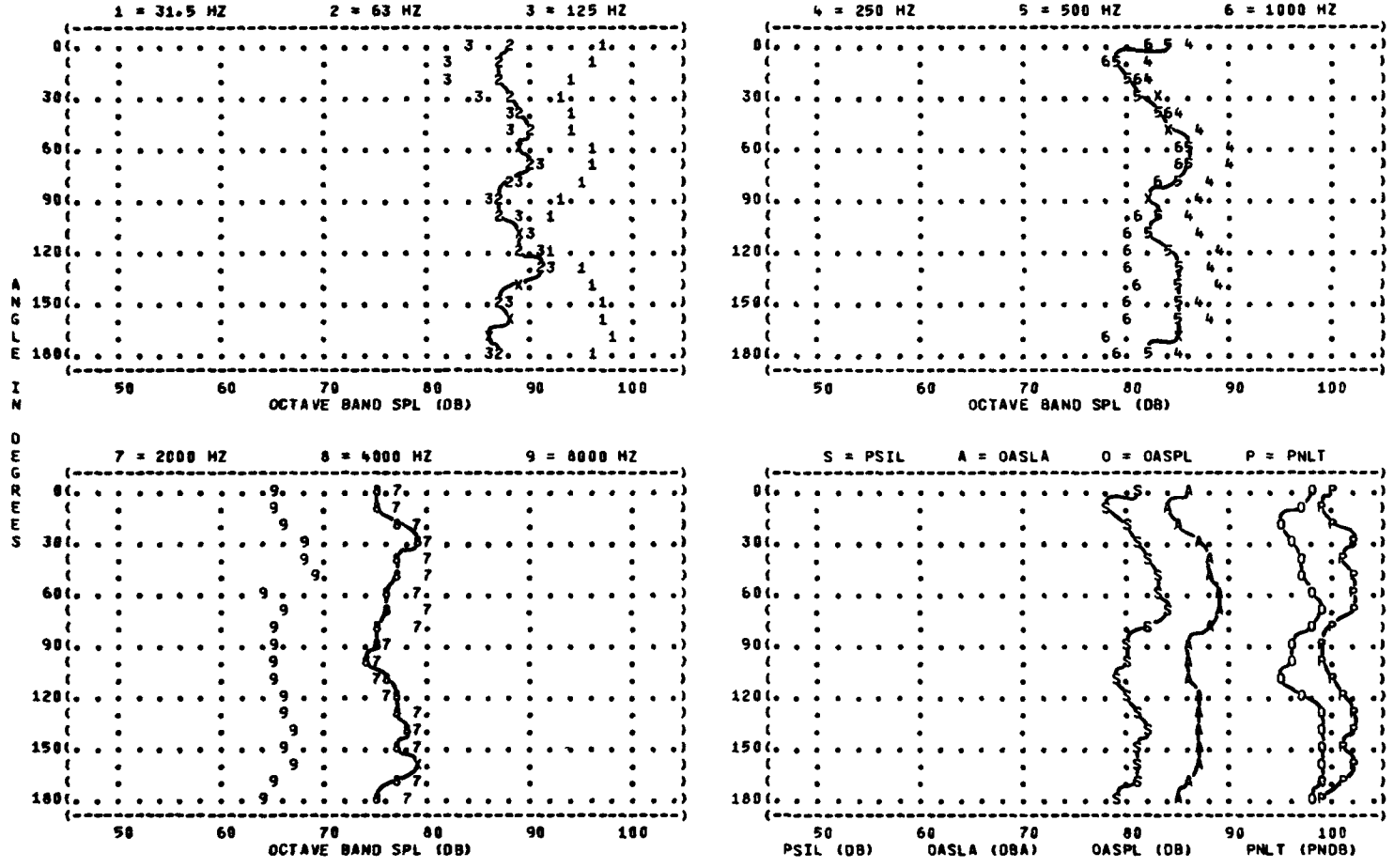


FIGURE 4 OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
ENGINE RUNUP 85% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 01
14 SEP 78
PAGE 13

| POINT | DB |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |

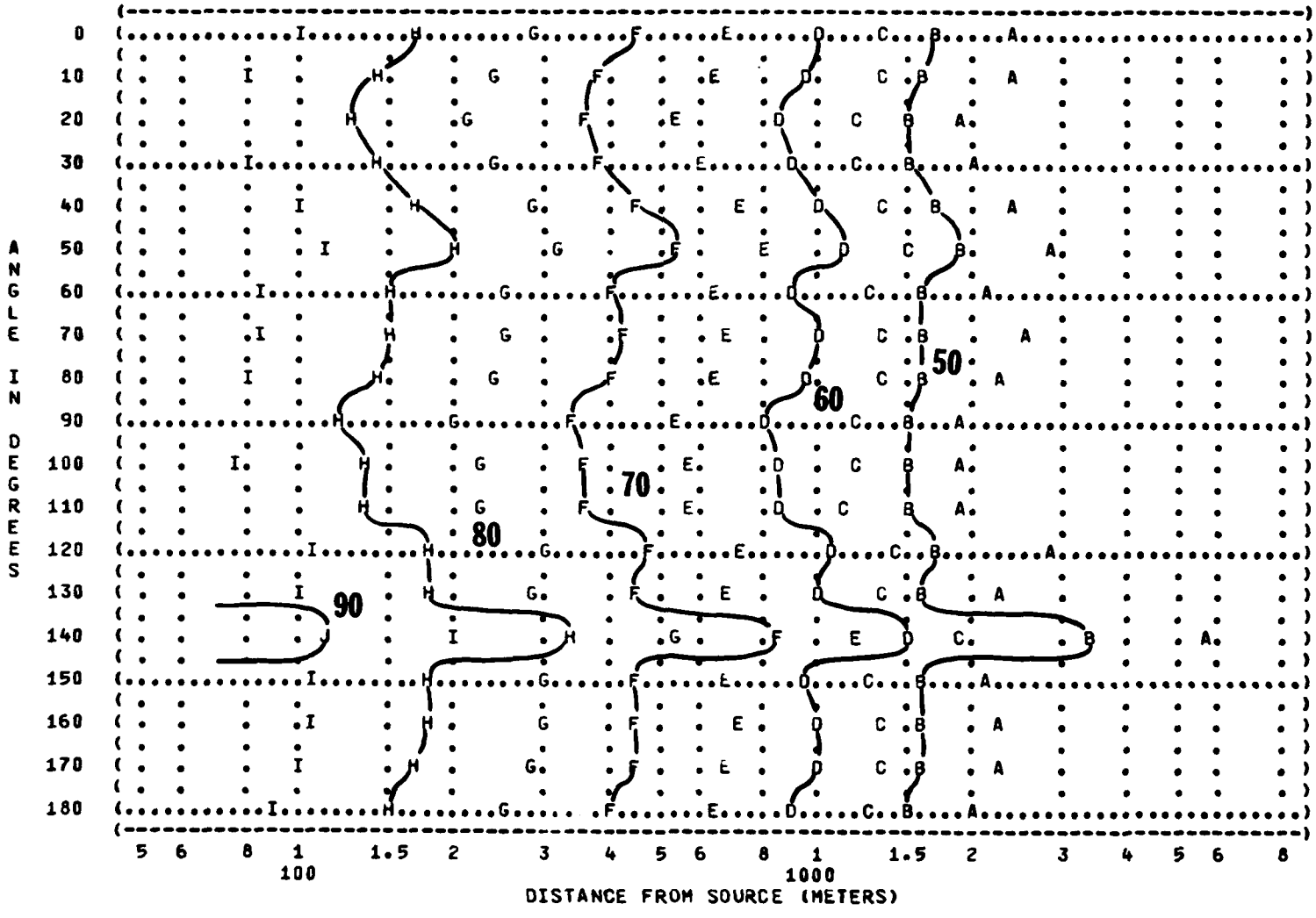


FIGURE: 4 OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 02
14 SEP 78
PAGE 13

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
MILITARY POWER 98.5% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DB |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |
| K | 95 |

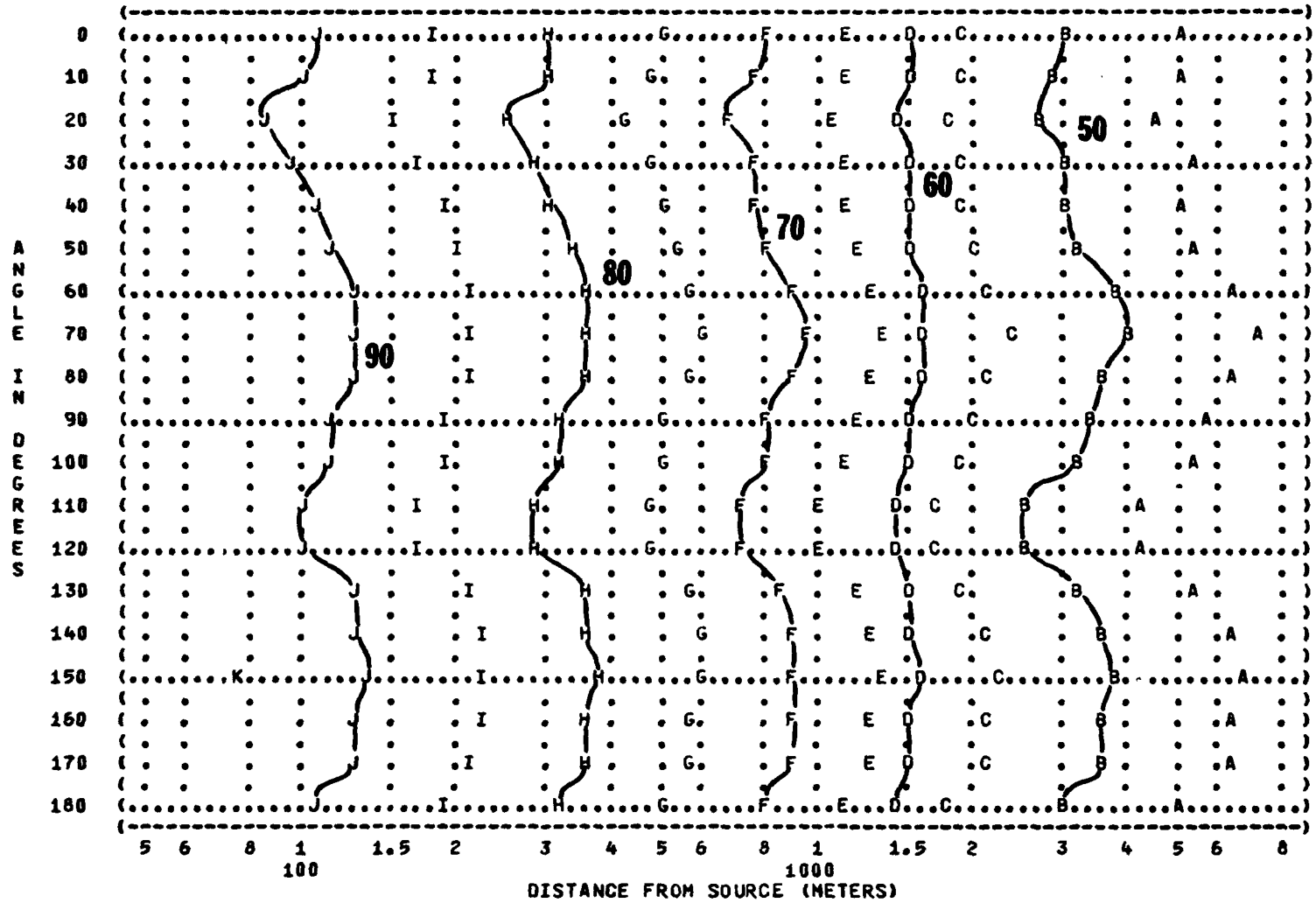


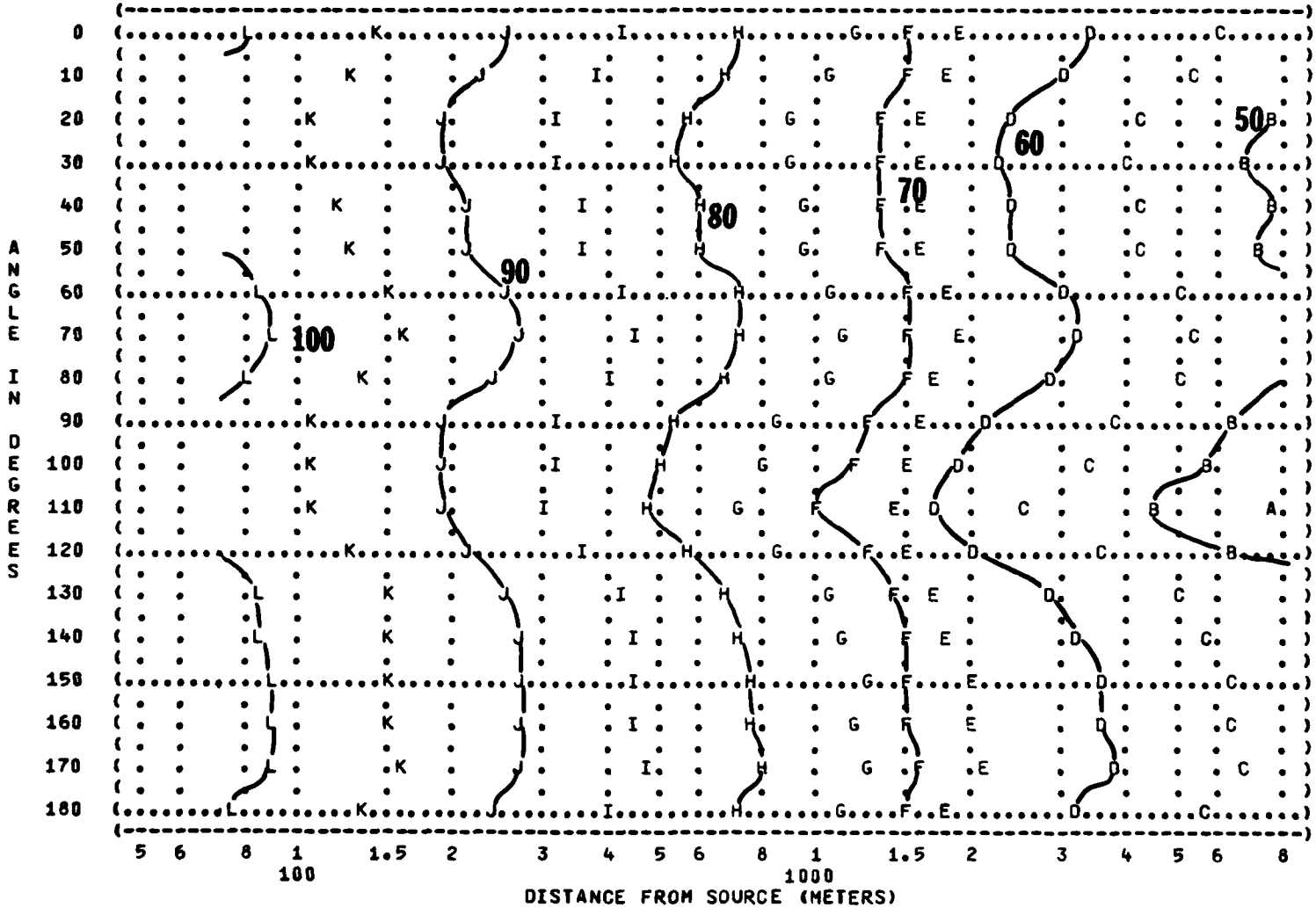
FIGURE: 4 OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 03
14 SEP 78
PAGE 13

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %




| POINT | DB |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |
| K | 95 |
| L | 100 |

FIGURE 5 C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 01
14 SEP 78
PAGE 14

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
ENGINE RUNUP 85% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DBC |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |

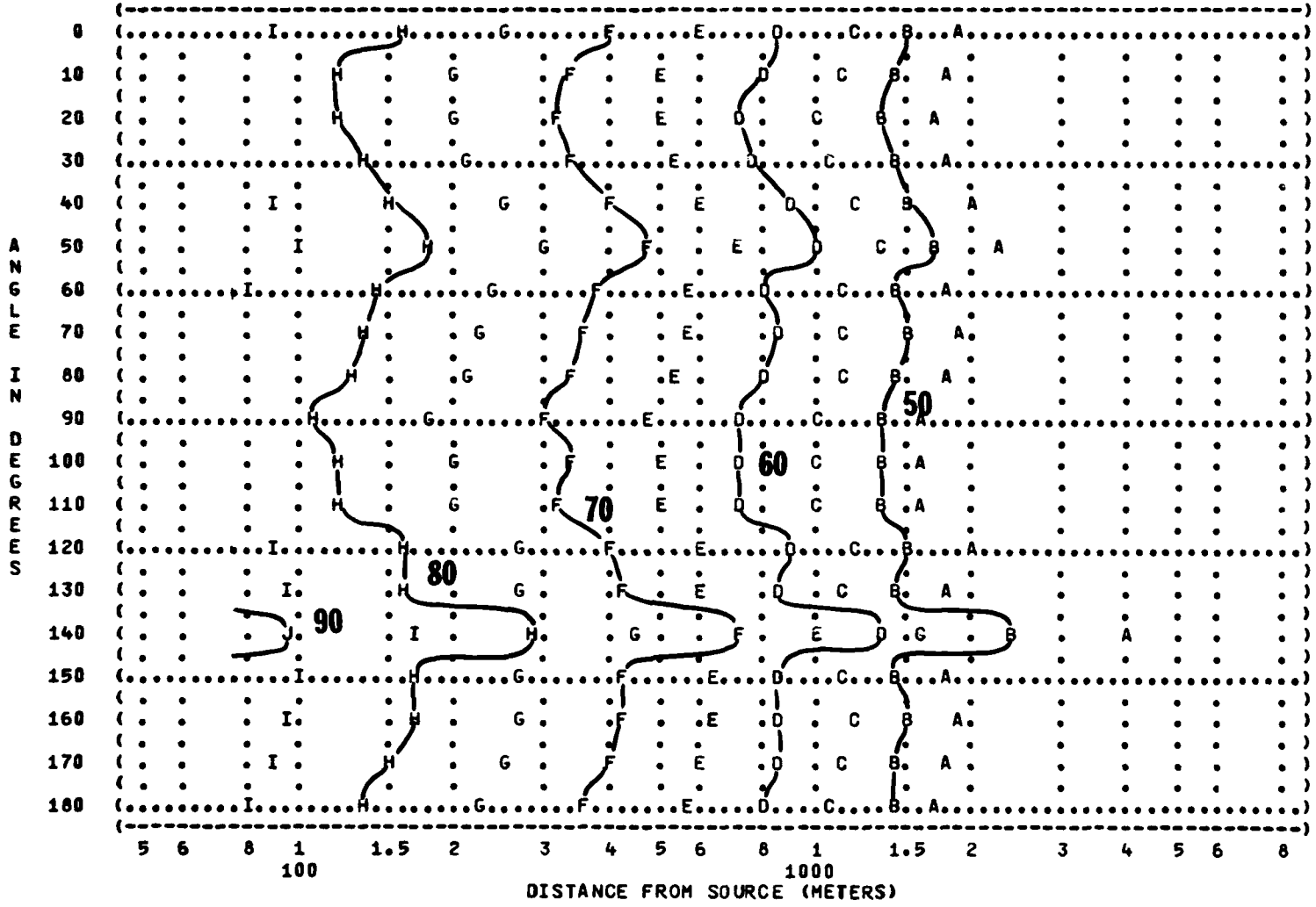


FIGURE 5 C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
MILITARY POWER 98.5% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-C01
RUN 02
14 SEP 78
PAGE 14

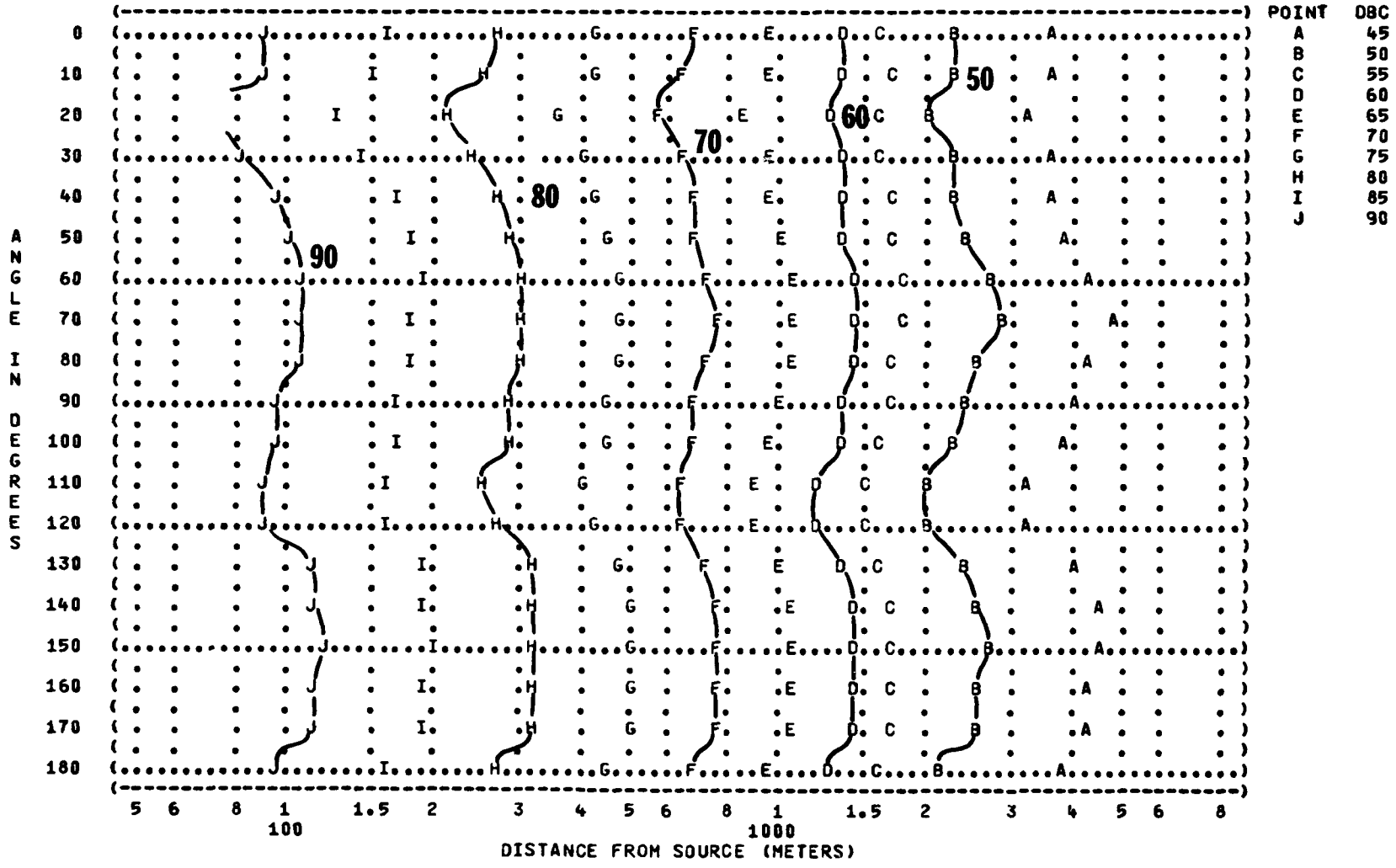


FIGURE 5 C-WEIGHTED OVERALL SOUND LEVEL (OASLC)
EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 03
14 SEP 78
PAGE 14

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

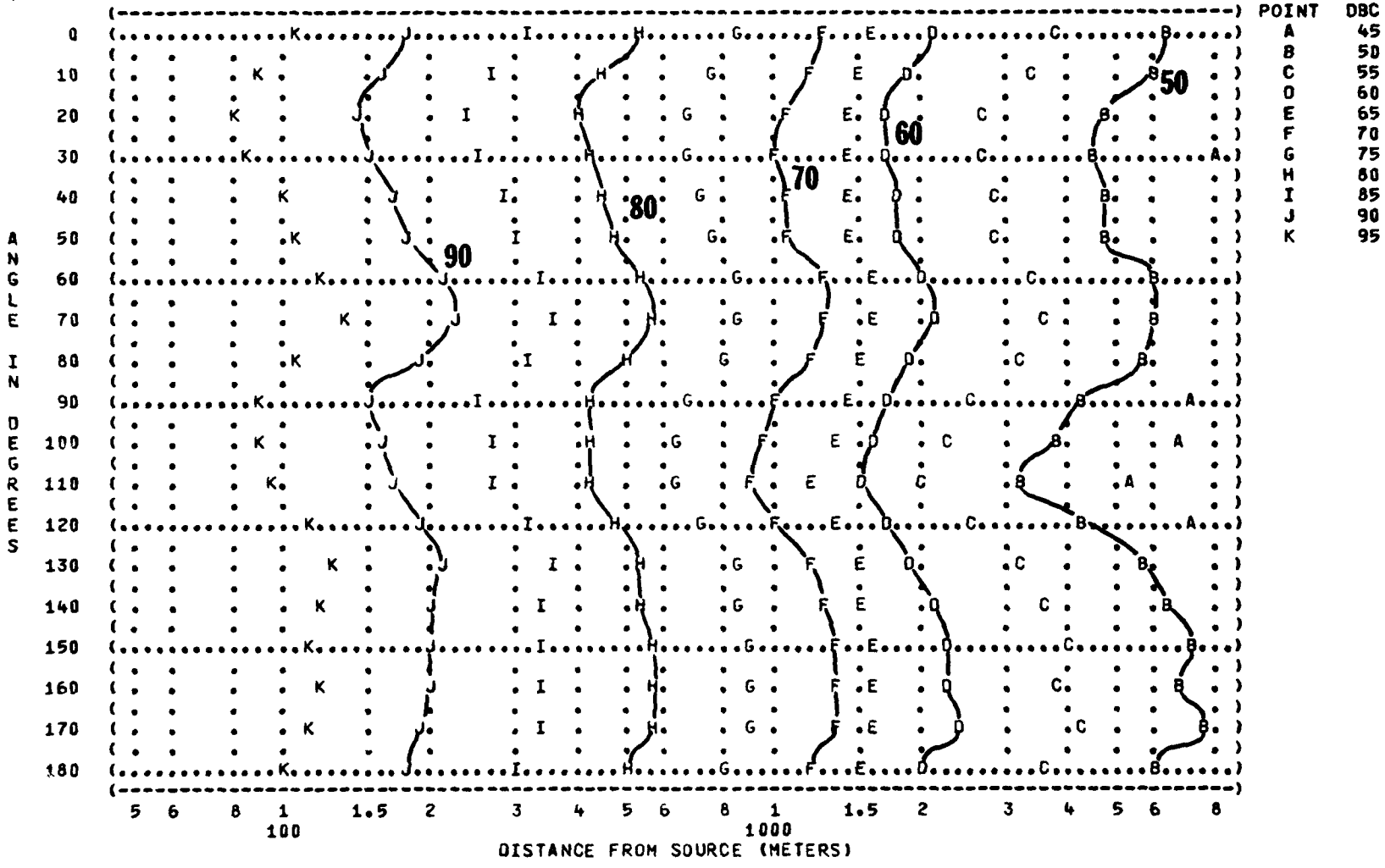


FIGURE 6 A-WEIGHTED OVERALL SOUND LEVEL (OASLA)
EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 01
14 SEP 78
PAGE 15

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
ENGINE RUNUP 85% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DBA |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |

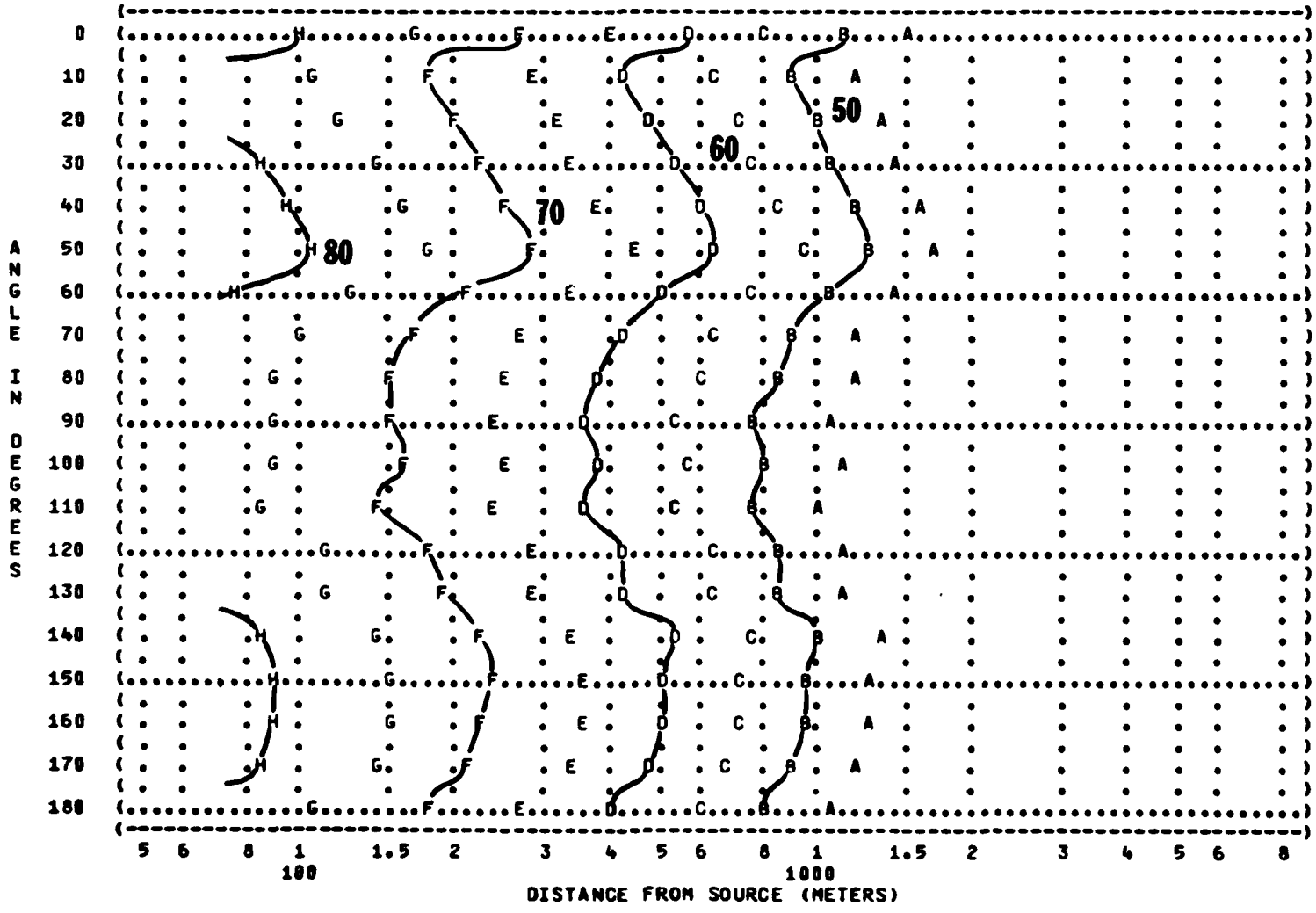


FIGURE 6: A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 02
14 SEP 78
PAGE 15

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
MILITARY POWER 98.5% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DBA |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |

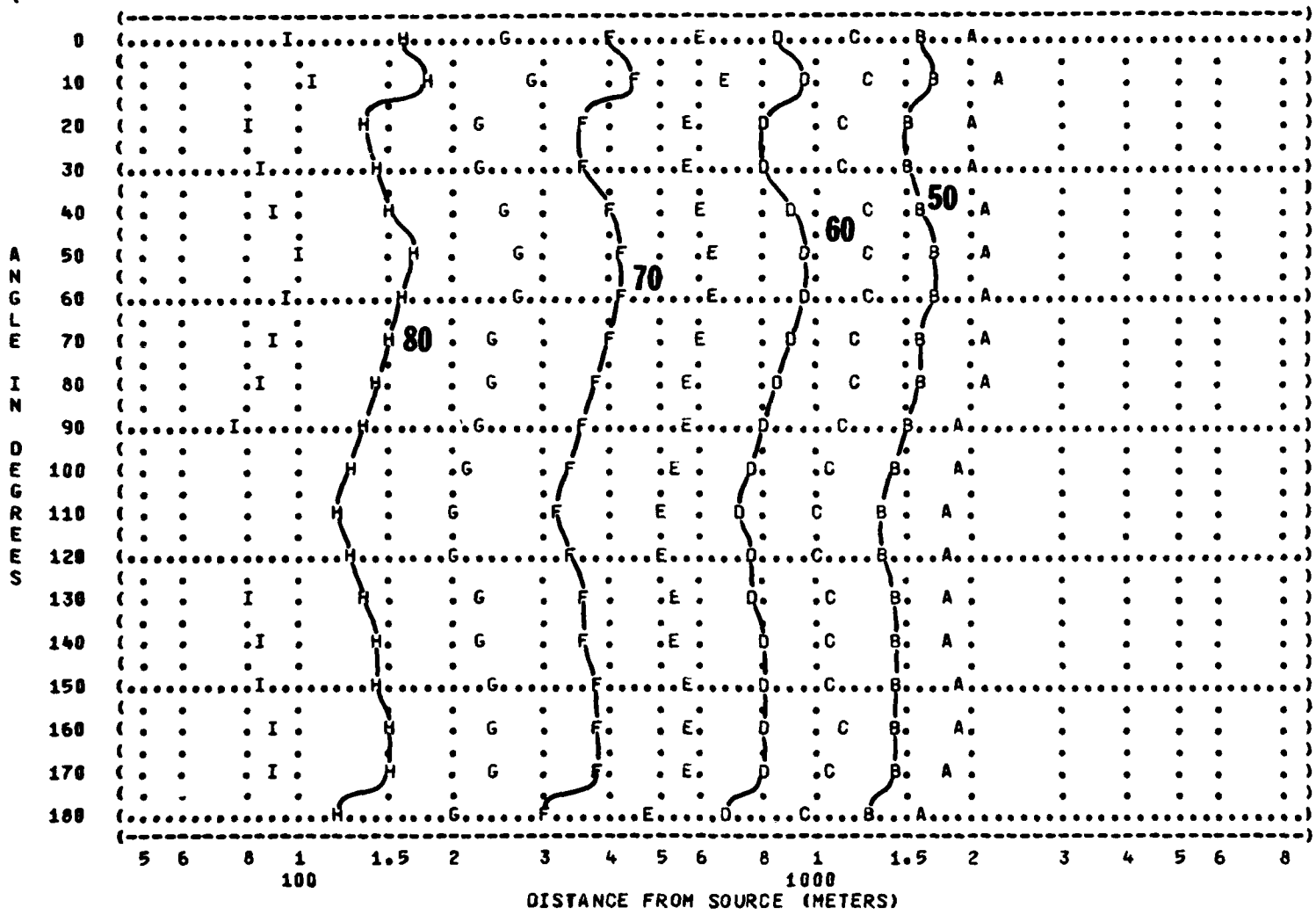


FIGURE: 6 A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 03
14 SEP 78
PAGE 15

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DBA |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |

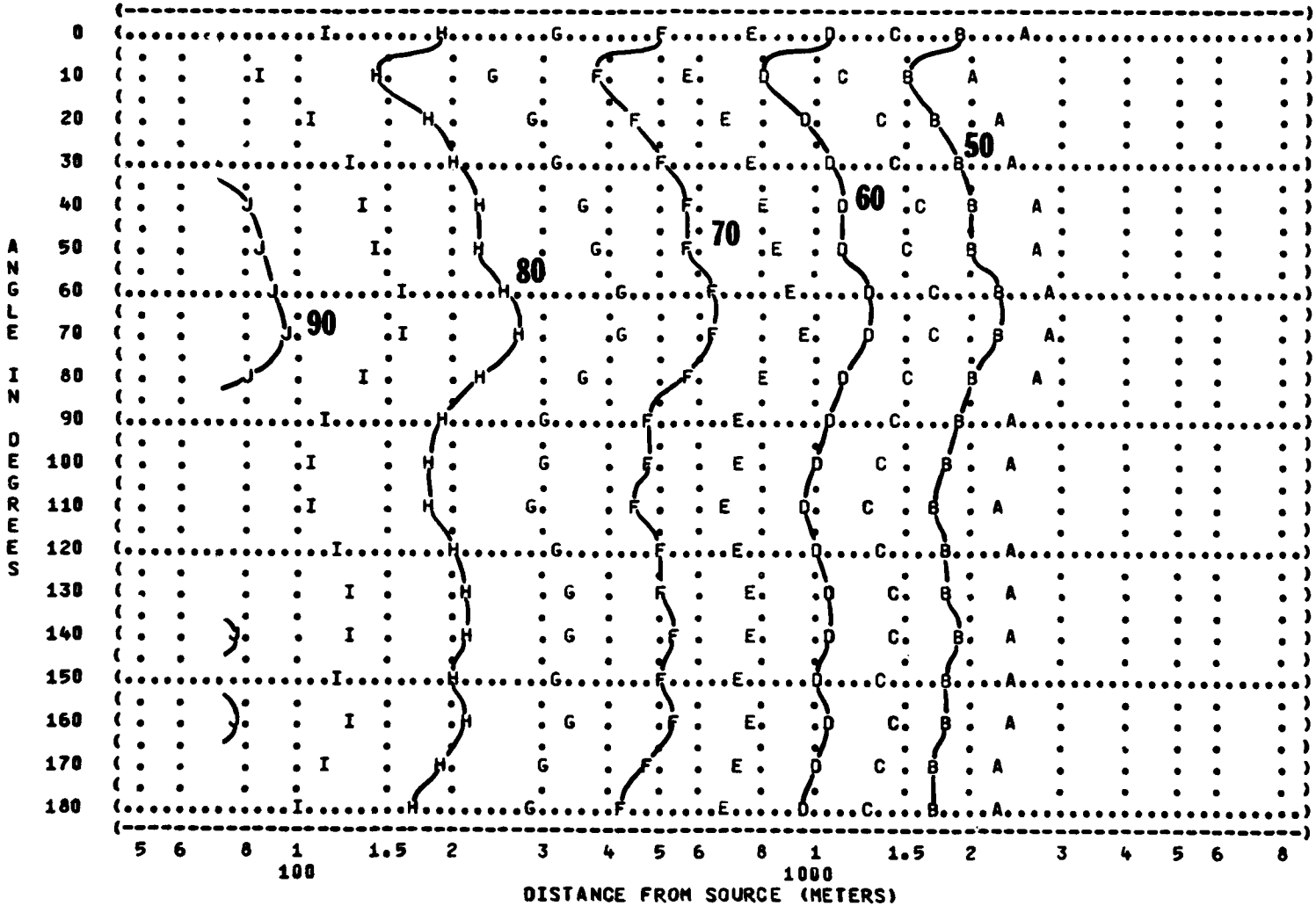


FIGURE 7 PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT)
EQUAL LEVEL CONTOURS (PNDB)

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
ENGINE RUNUP 85% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 01
14 SEP 78
PAGE 16

| POINT | PNDB |
|---|---|
| A | 60 |
| B | 65 |
| C | 70 |
| D | 75 |
| E | 80 |
| F | 85 |
| G | 90 |
| H | 95 |

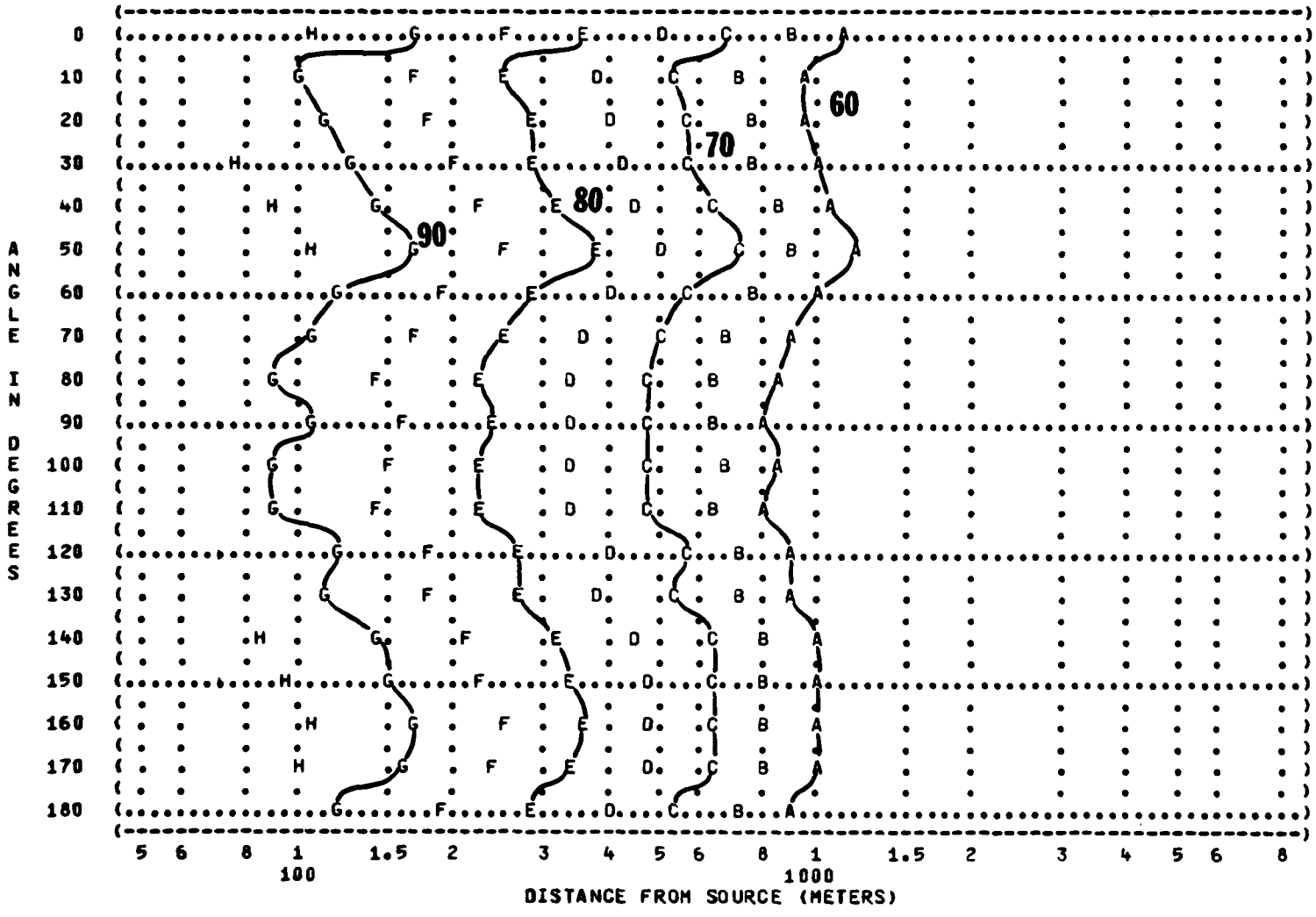


FIGURE 7: PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT)
EQUAL LEVEL CONTOURS (PNDB)

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
MILITARY POWER 98.5% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 02
14 SEP 78
PAGE 16

| POINT | PNDB |
|---|---|
| A | 60 |
| B | 65 |
| C | 70 |
| D | 75 |
| E | 80 |
| F | 85 |
| G | 90 |
| H | 95 |
| I | 100 |

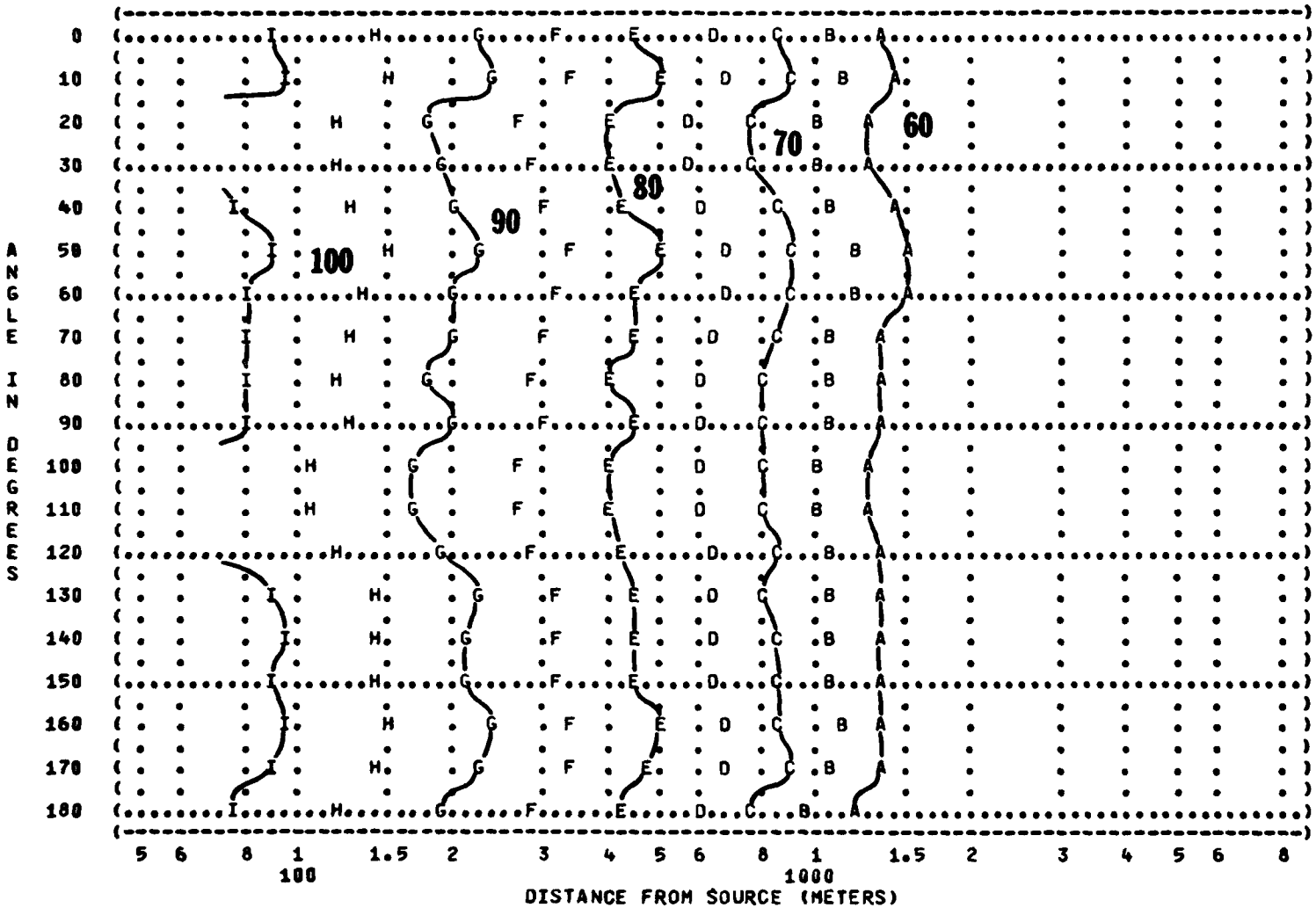


FIGURE 7 PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT) EQUAL LEVEL CONTOURS (PNDB)

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 03
14 SEP 78
PAGE 16

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | PNDB |
|---|---|
| A | 60 |
| B | 65 |
| C | 70 |
| D | 75 |
| E | 80 |
| F | 85 |
| G | 90 |
| H | 95 |
| I | 100 |
| J | 105 |

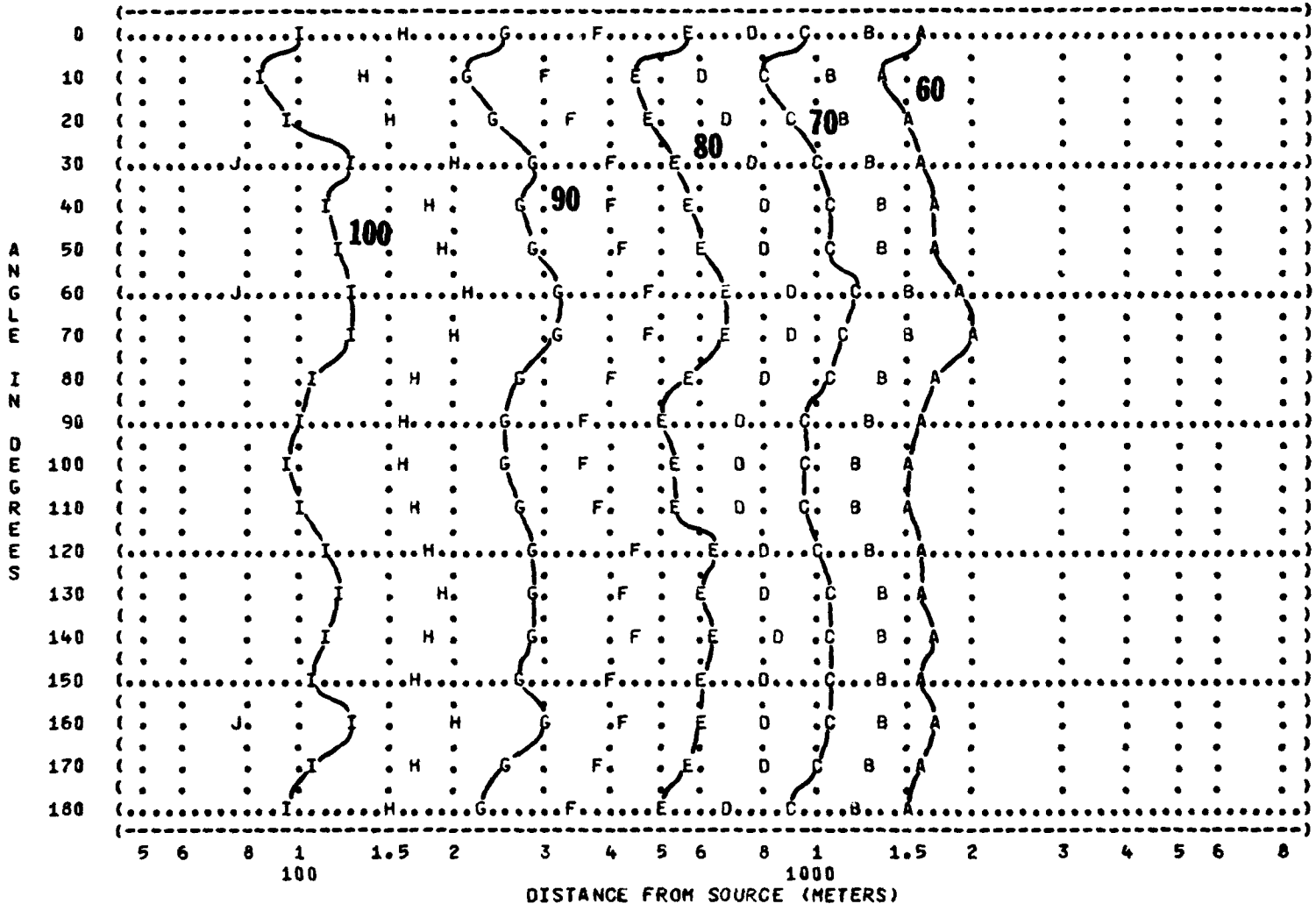


FIGURE 8 PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 01
14 SEP 78
PAGE 17

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
ENGINE RUNUP 85% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |

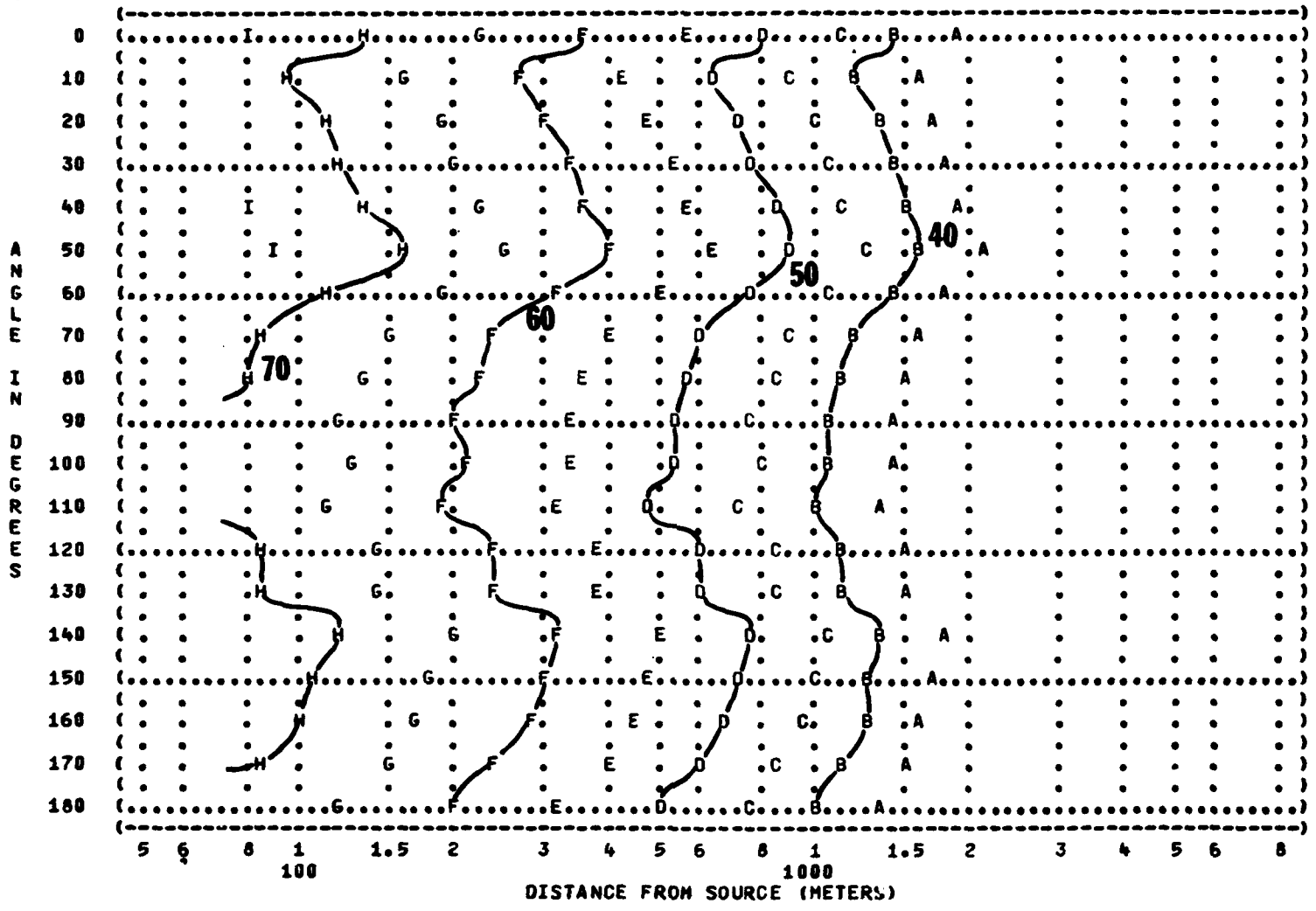


FIGURE 8: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 02
14 SEP 78
PAGE 17

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
MILITARY POWER 98.5% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |

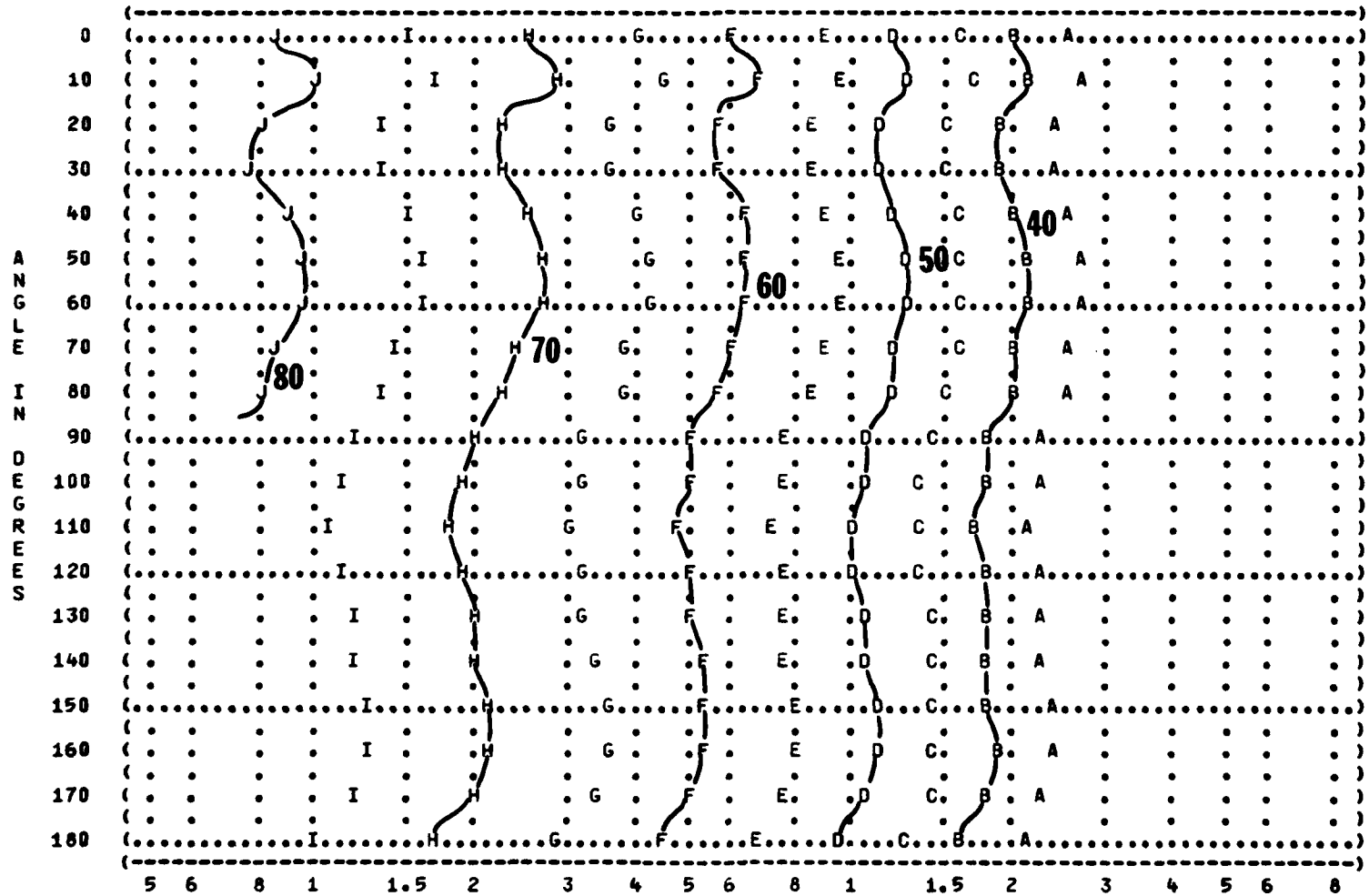


FIGURE 8 PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)
EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 03
14 SEP 78
PAGE 17

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |

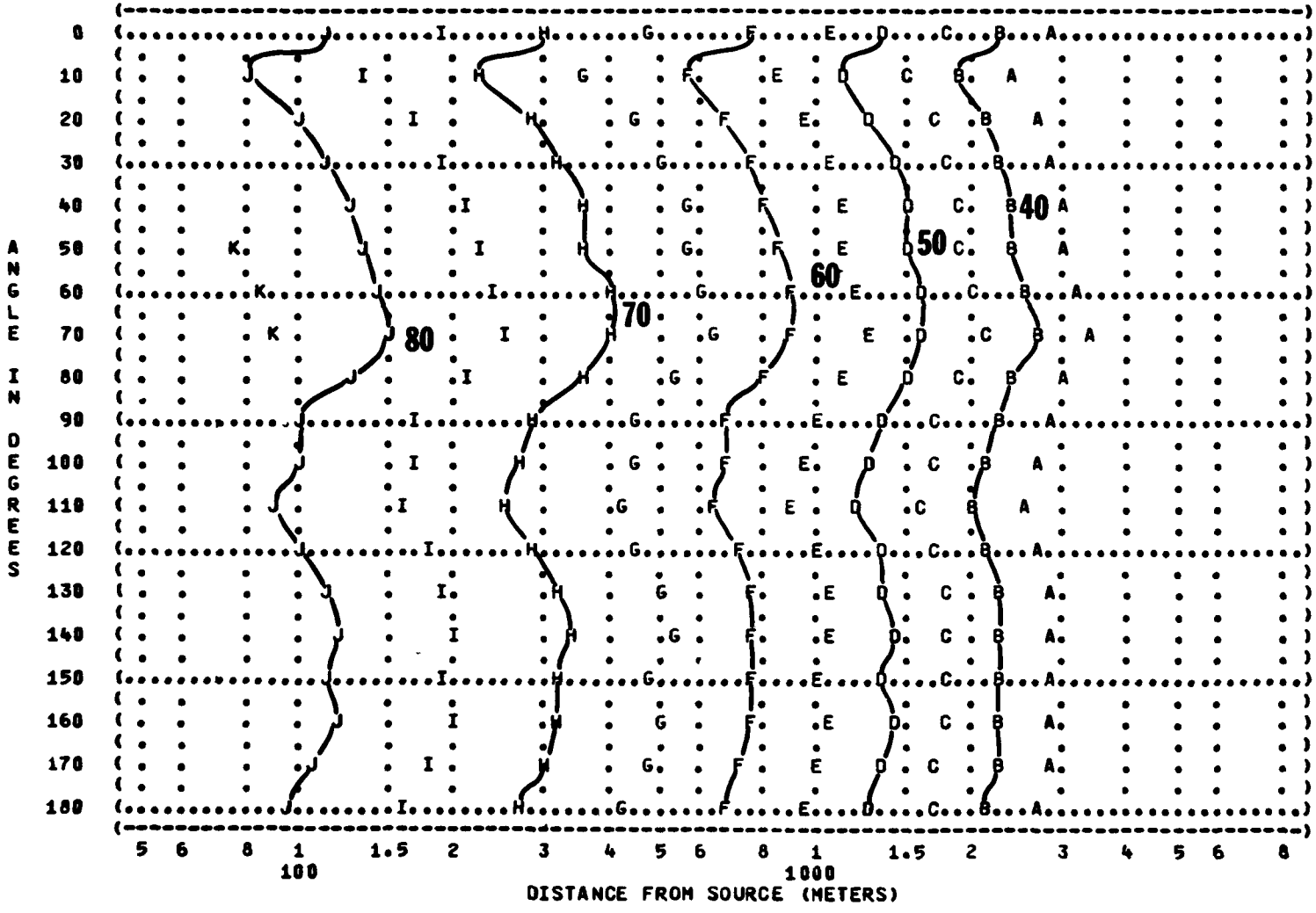


FIGURE 9 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 01
14 SEP 78
PAGE 7

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
ENGINE RUNUP 85% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | MIN |
|---|---|
| A | 960 |

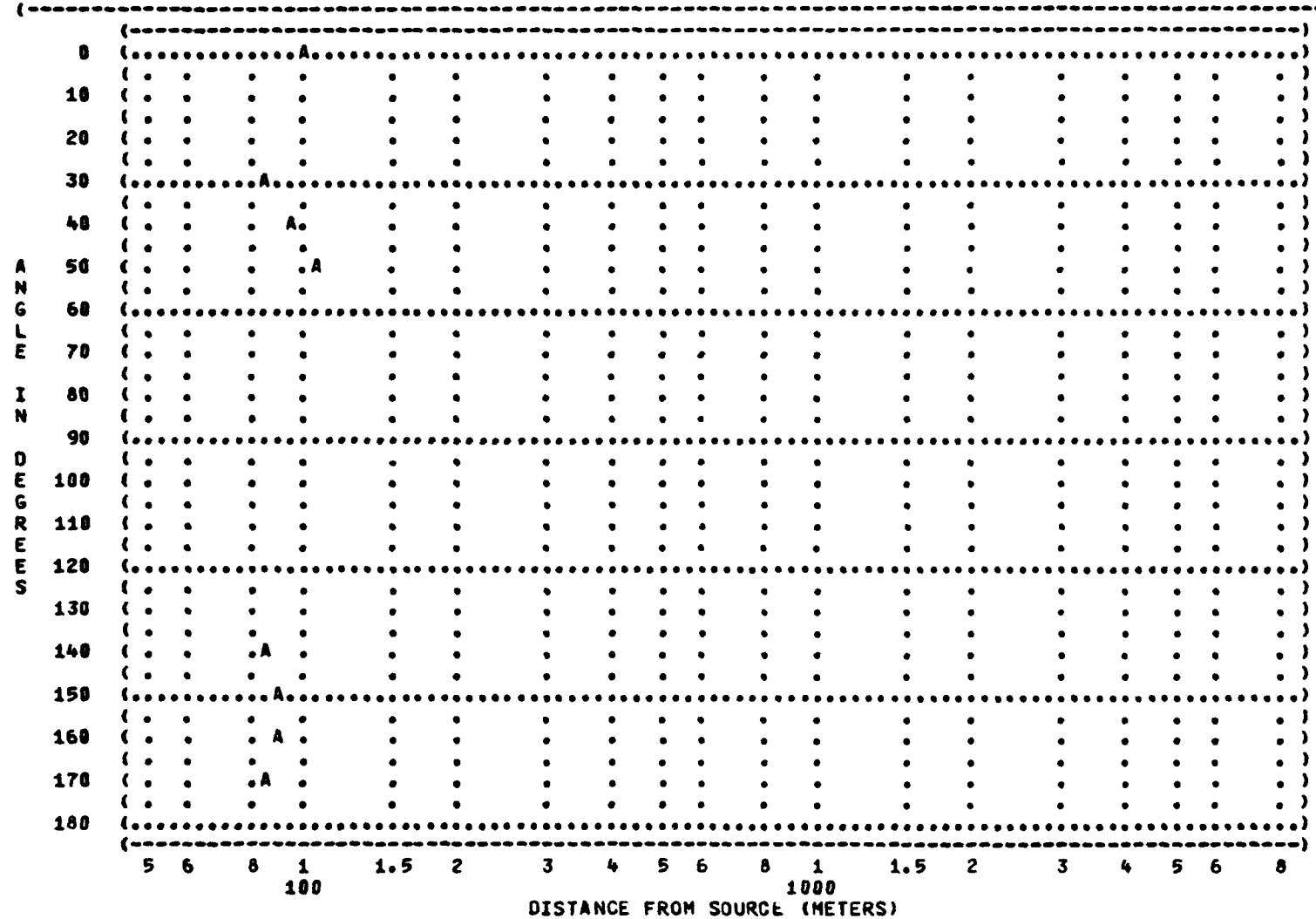


FIGURE 9: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-081
RUN 01
14 SEP 78
PAGE 8

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
ENGINE RUNUP 85% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

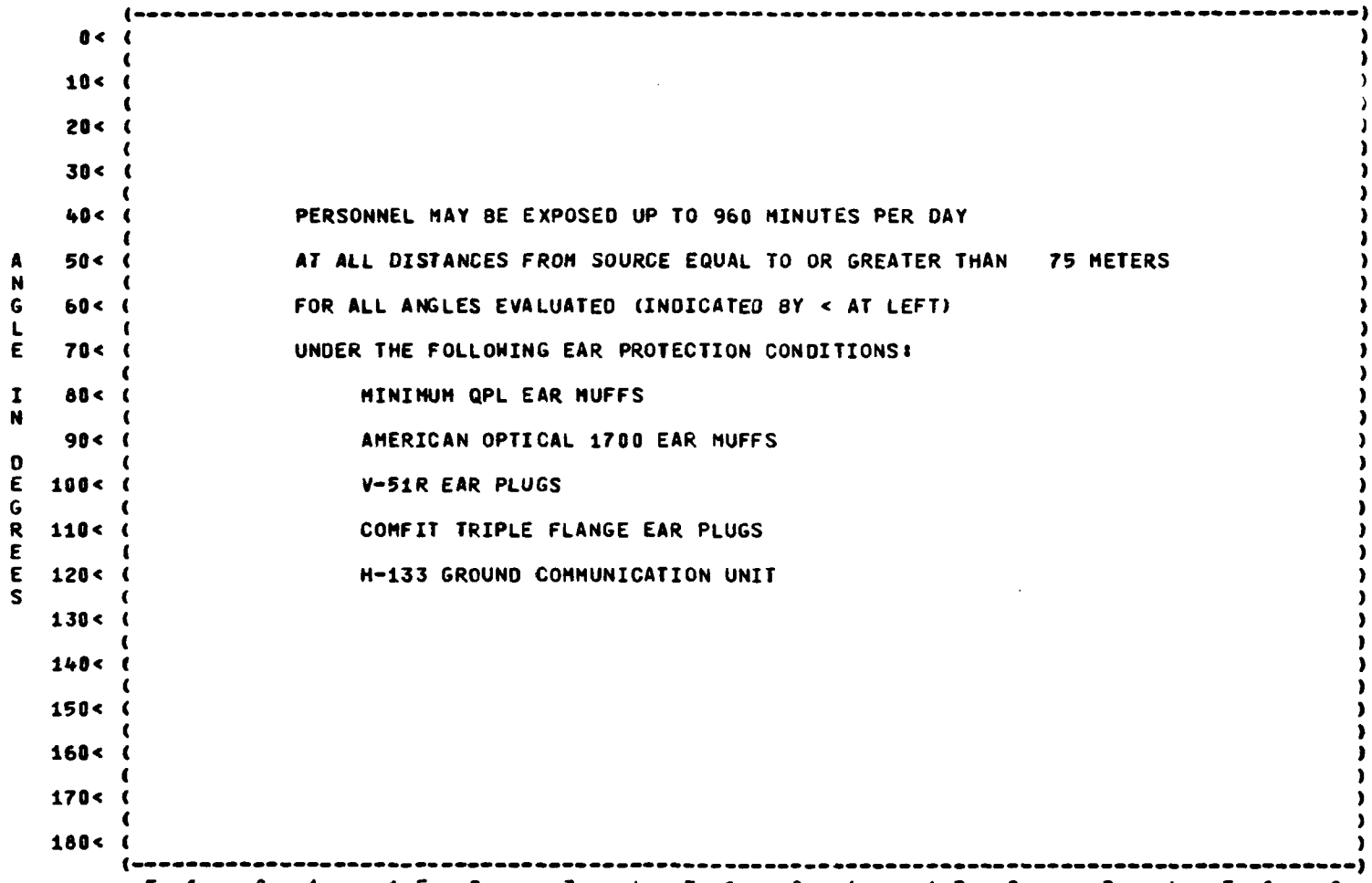


FIGURE 9: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 02
14 SEP 78
PAGE 7

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
MILITARY POWER 98.5% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | MIN |
|---|---|
| A | 960 |
| B | 480 |
| C | 240 |

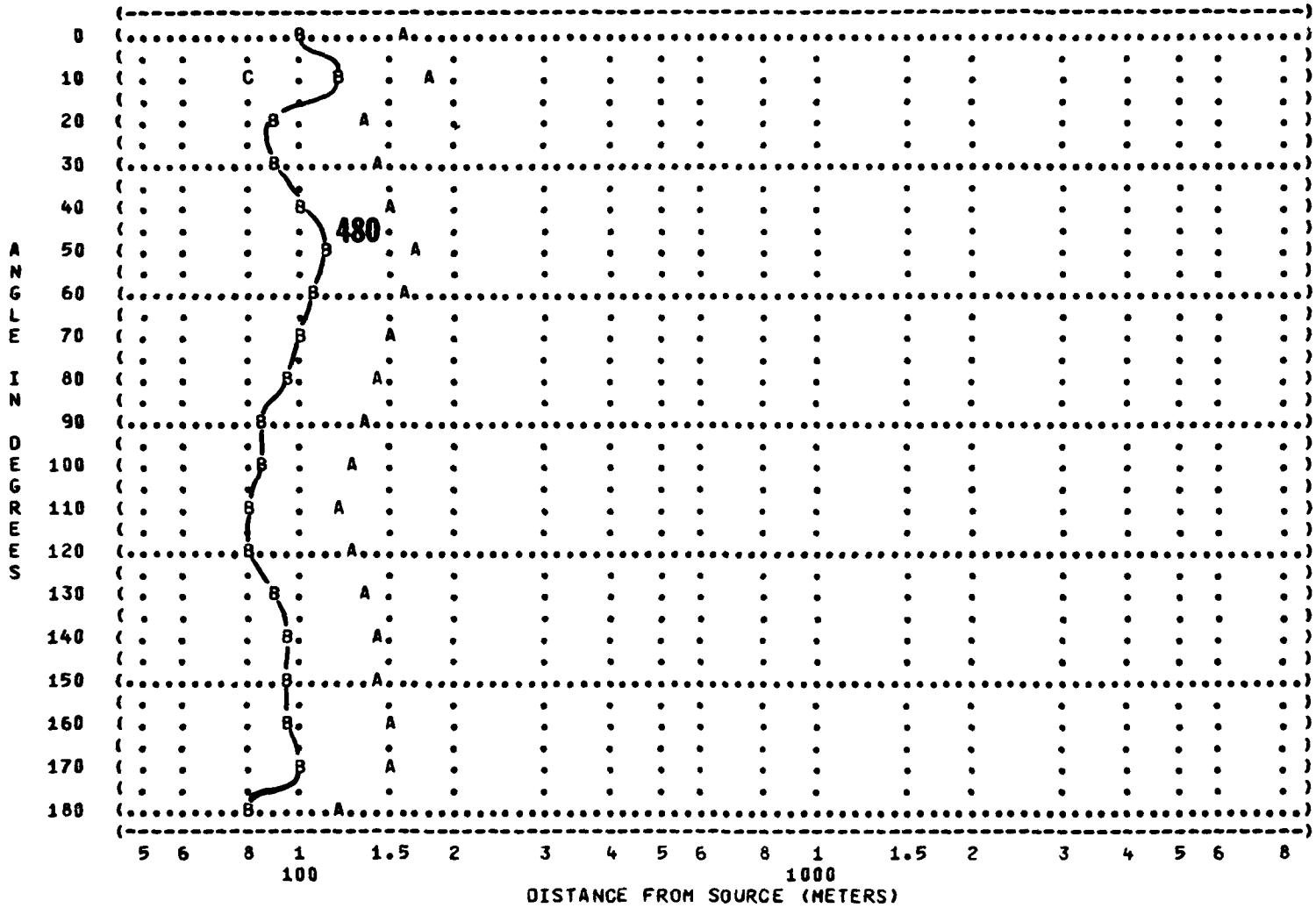


FIGURE: 9 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) EQUAL TIME CONTOURS (MINUTES)

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 02
14 SEP 78
PAGE 8

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE AF32A-14 SUPPRESSOR ENGINE J79-GE-17 FAR FIELD NOISE

OPERATION:
MILITARY POWER 98.5% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

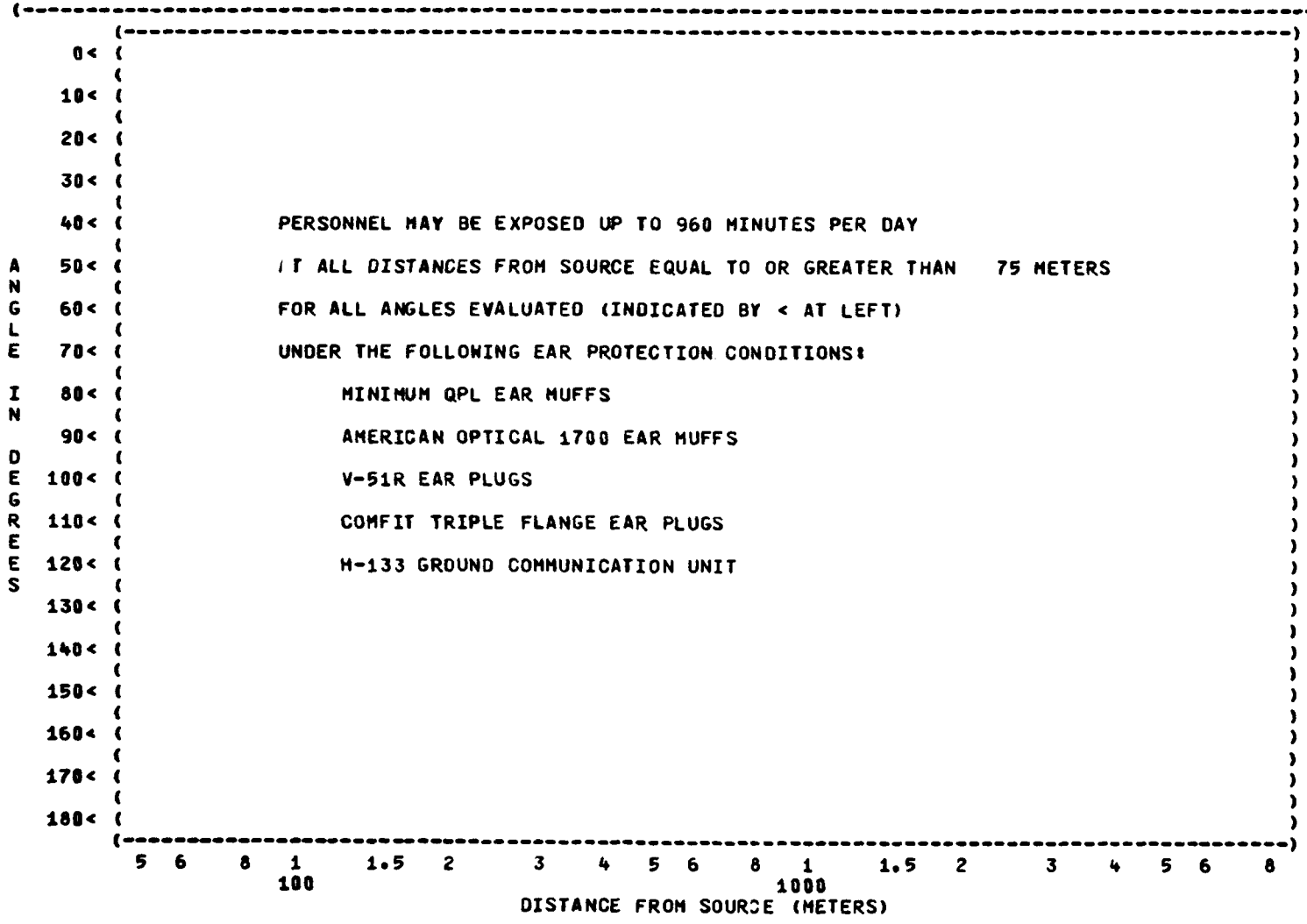


FIGURE 9: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 03
14 SEP 78
PAGE 7

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | MIN |
|---|---|
| A | 960 |
| B | 480 |
| C | 240 |

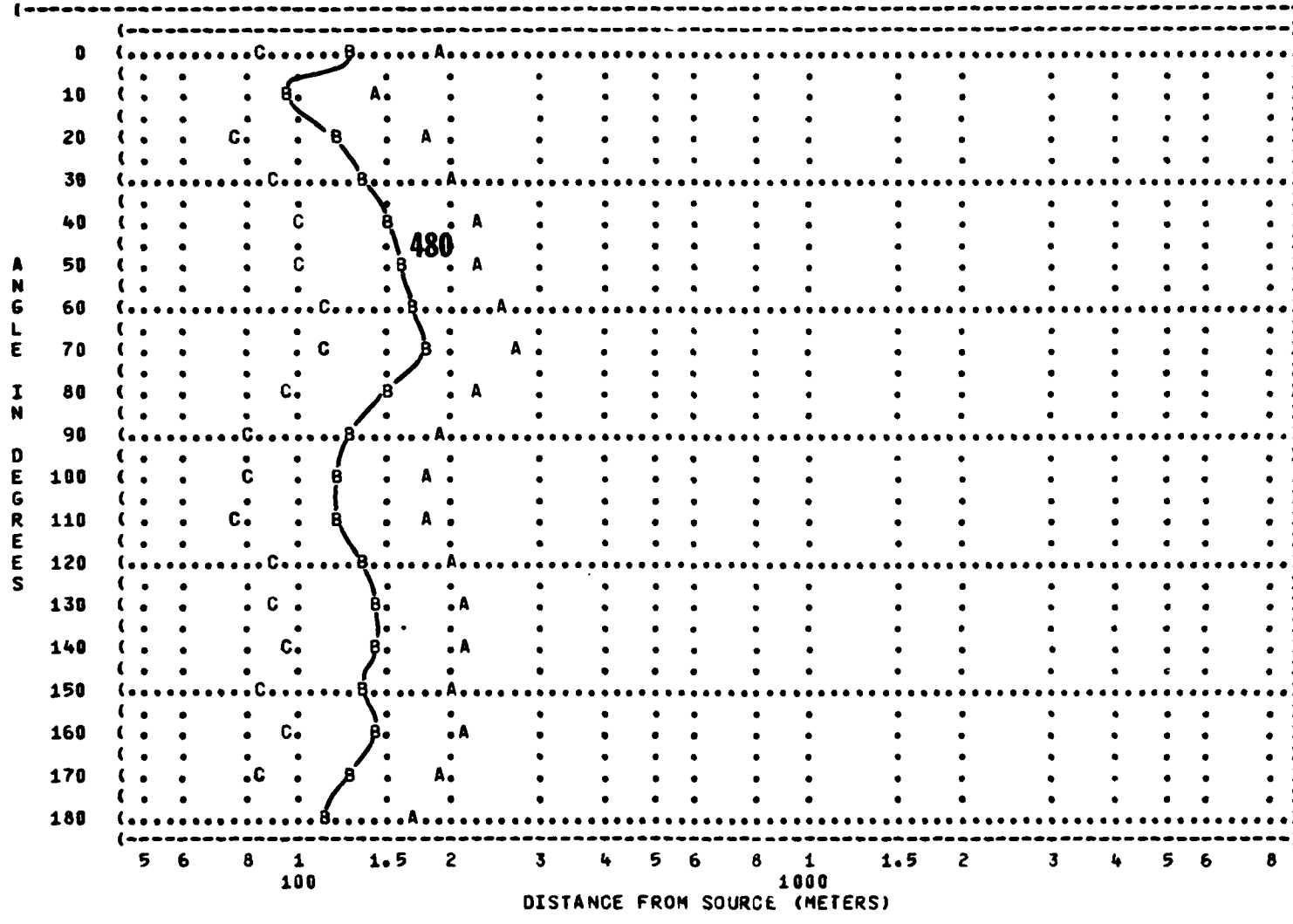


FIGURE 9: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 03
14 SEP 78
PAGE 8

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

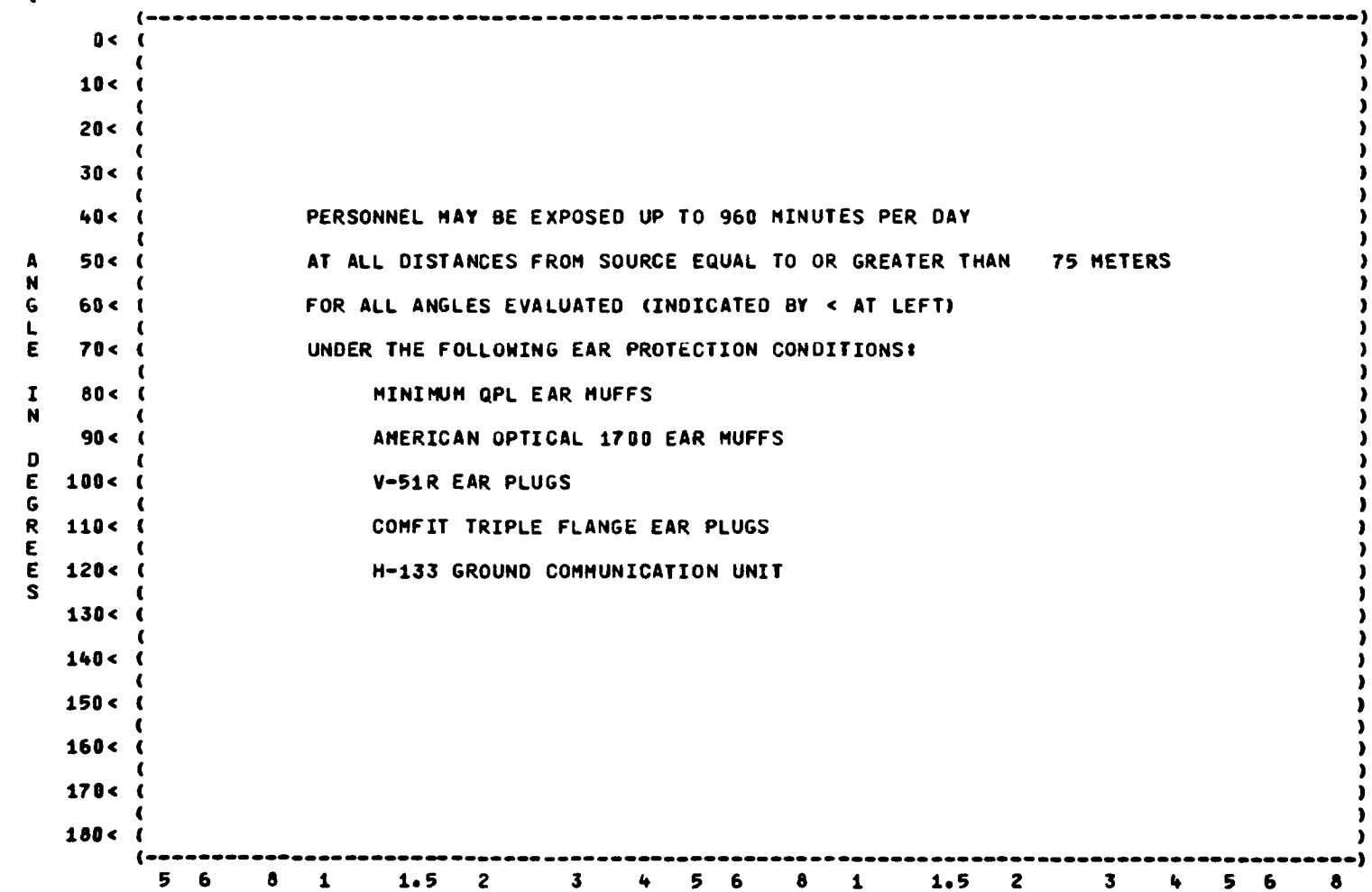


FIGURE 10: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
ENGINE RUNUP 85% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 01
14 SEP 78
PAGE 18

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |

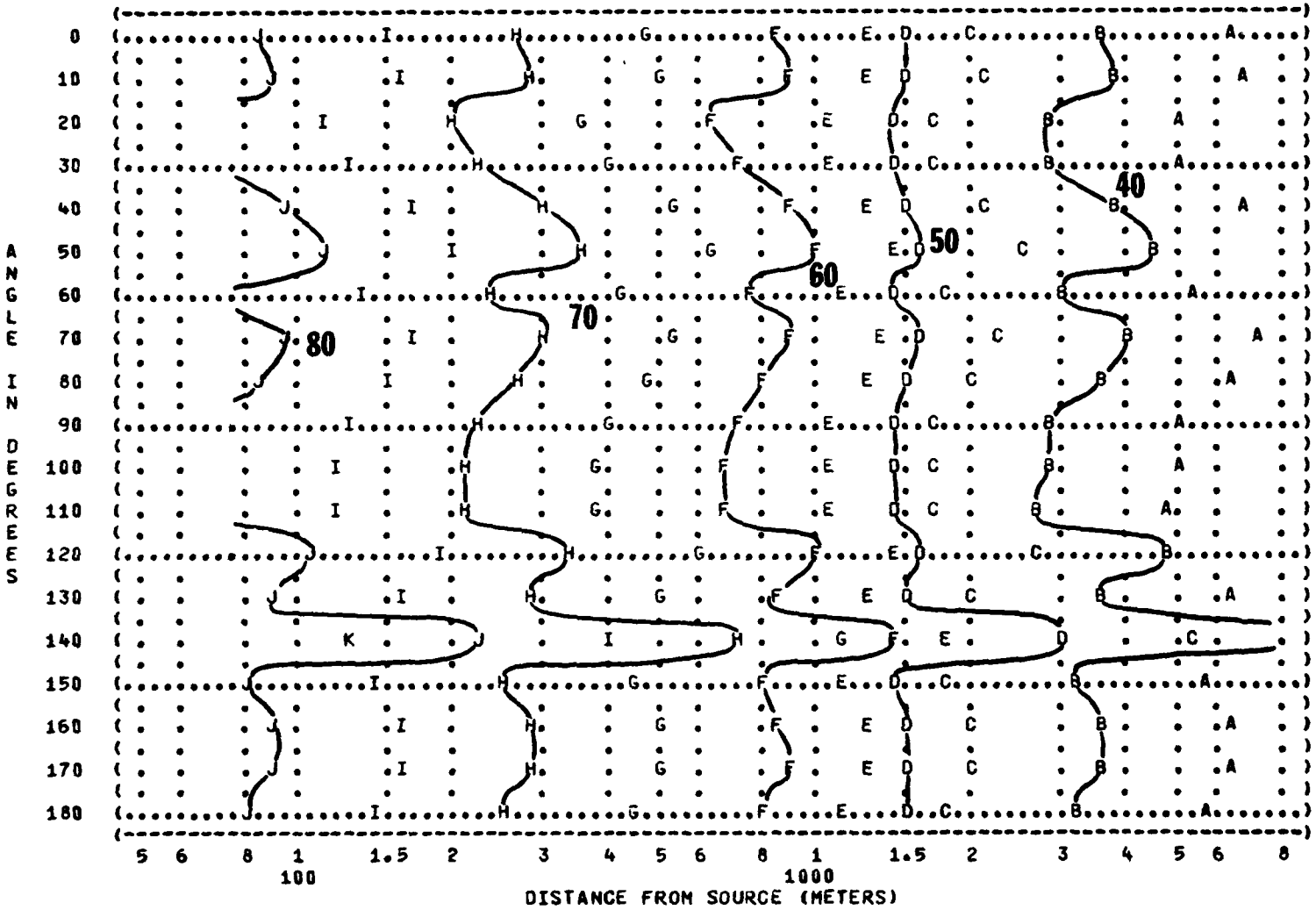


FIGURE 10: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 77-731-001 RUN 01 14 SEP 78 PAGE 19

NOISE SOURCE/SUBJECT: F-4 AIRCRAFT IN THE AF32A-14 SUPPRESSOR ENGINE J79-GE-17 FAR FIELD NOISE

OPERATION: ENGINE RUNUP 85% RPM SINGLE ENGINE GROUND RUNUP (SUPPRESSED)

METEOROLOGY: TEMP = 15 C BAR PRESS = .760 M HG REL HUMID = 70 %

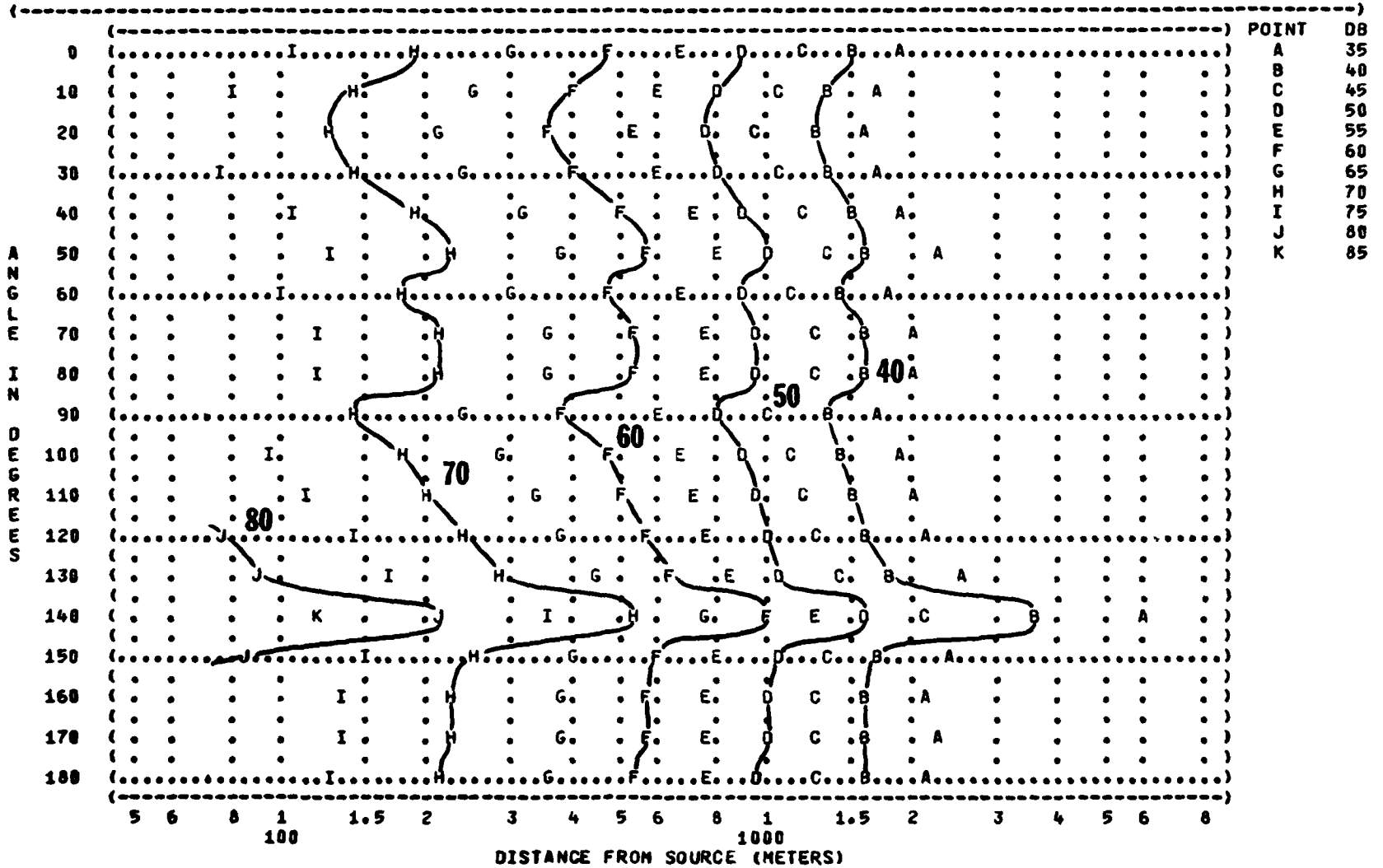


FIGURE 10: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
ENGINE RUNUP 85% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 01
14 SEP 78
PAGE 20

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |

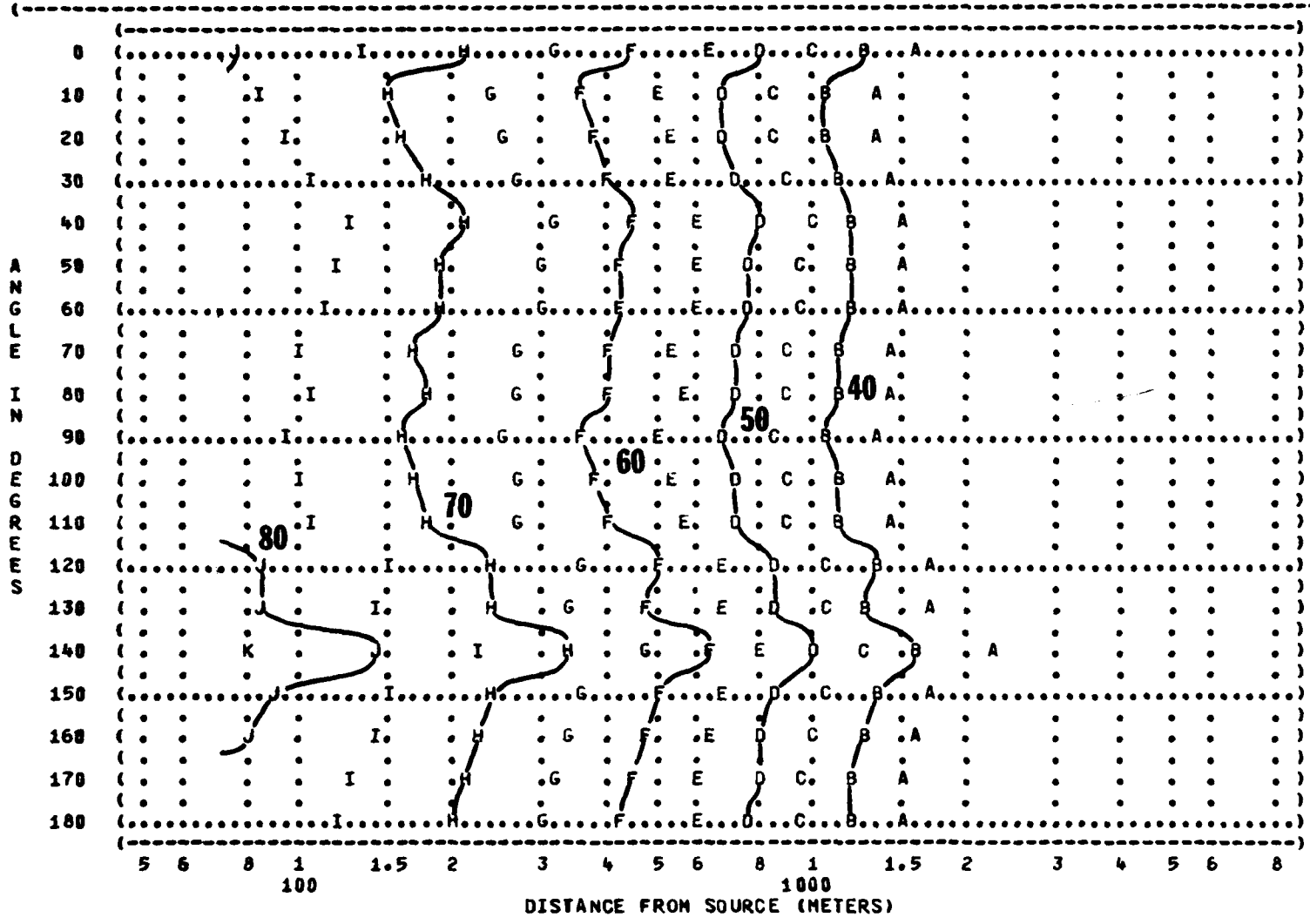


FIGURE: 10

SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
250 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
ENGINE RUNUP 85% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 01

14 SEP 78

PAGE 21

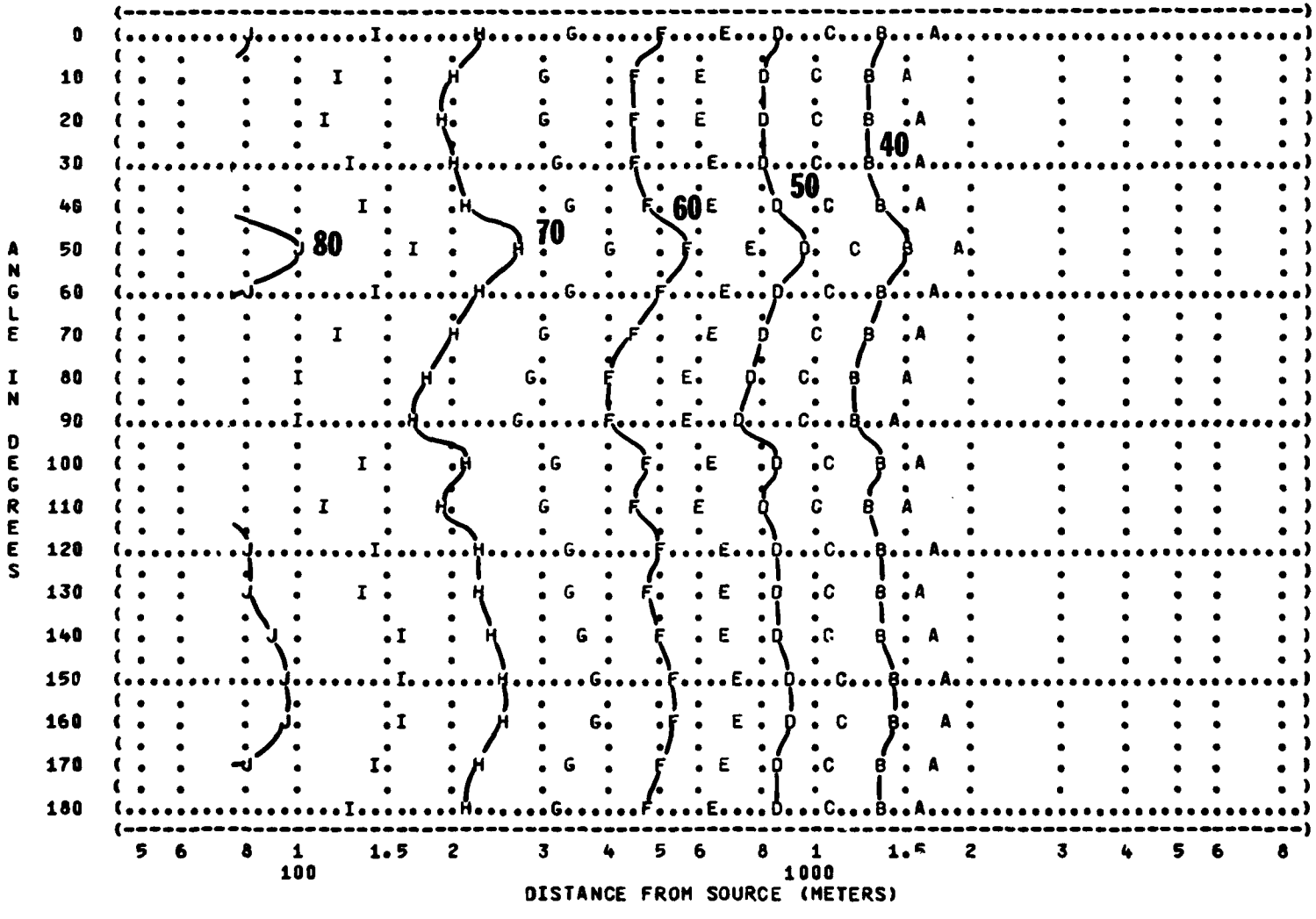


FIGURE 10: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 01
14 SEP 78
PAGE 22

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
ENGINE RUNUP 85% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |

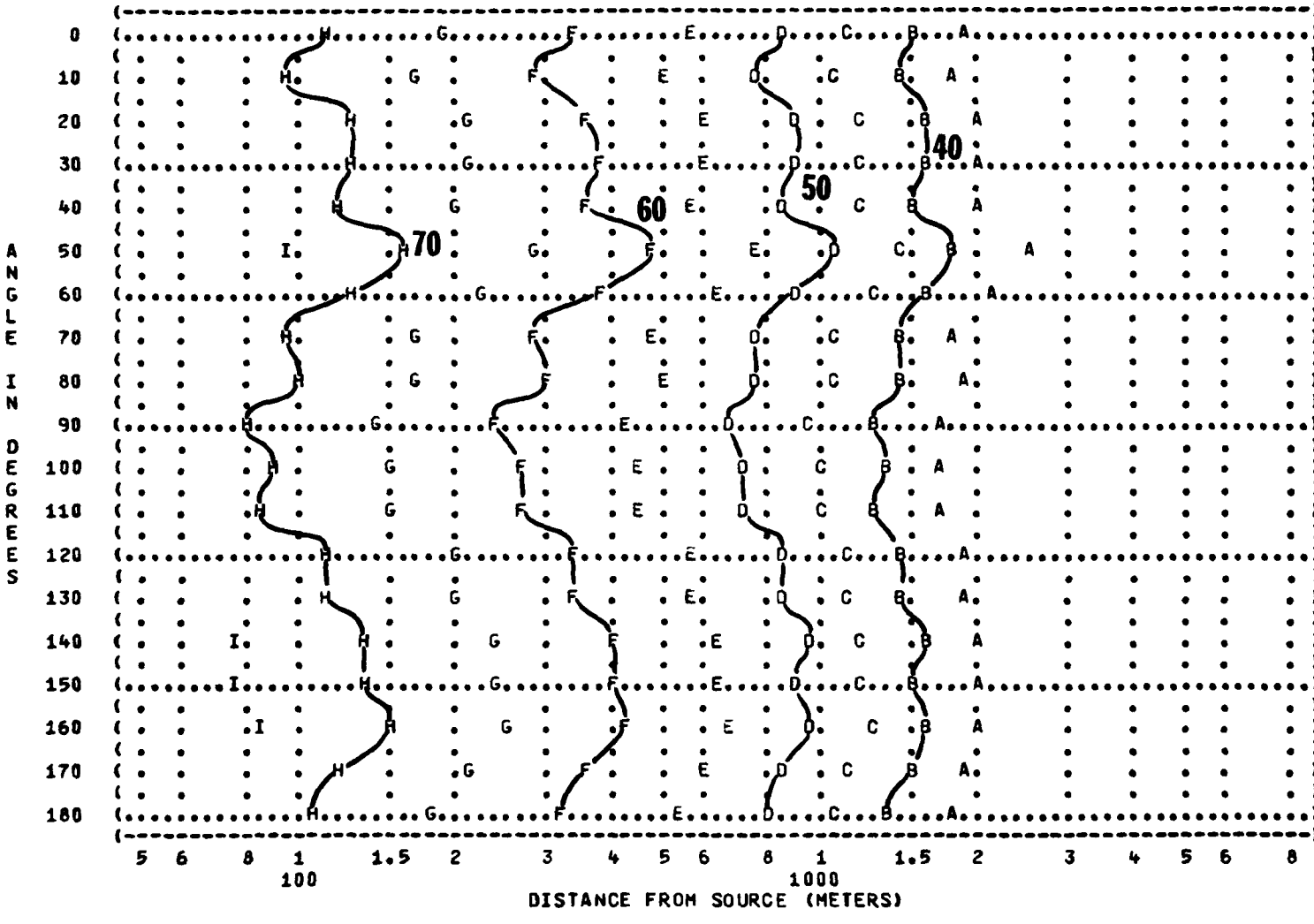


FIGURE 10: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 01
14 SEP 78
PAGE 23

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
ENGINE RUNUP 85% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |

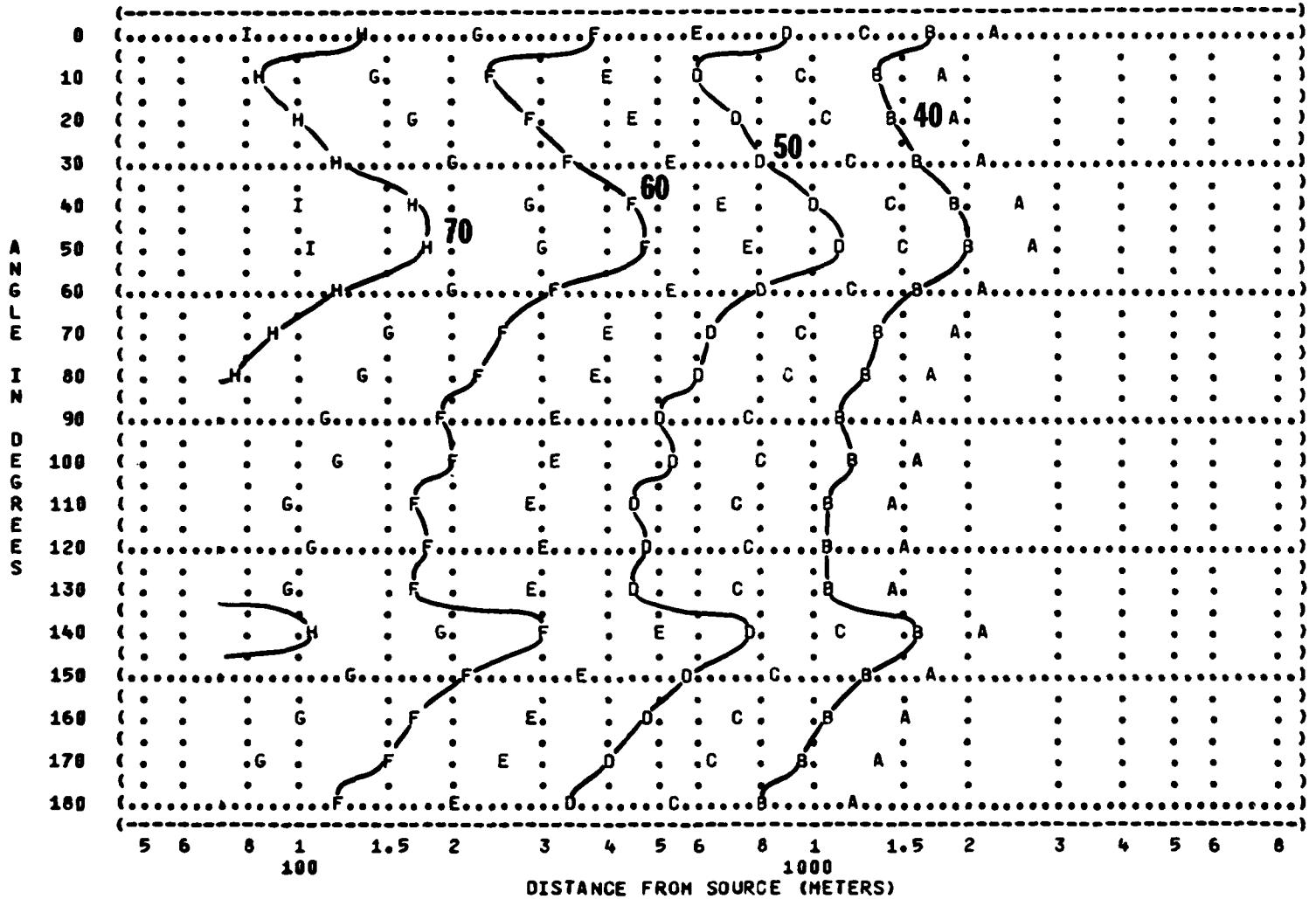


FIGURE: 10

SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
2000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 01
14 SEP 78
PAGE 24

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
ENGINE RUNUP 85% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |

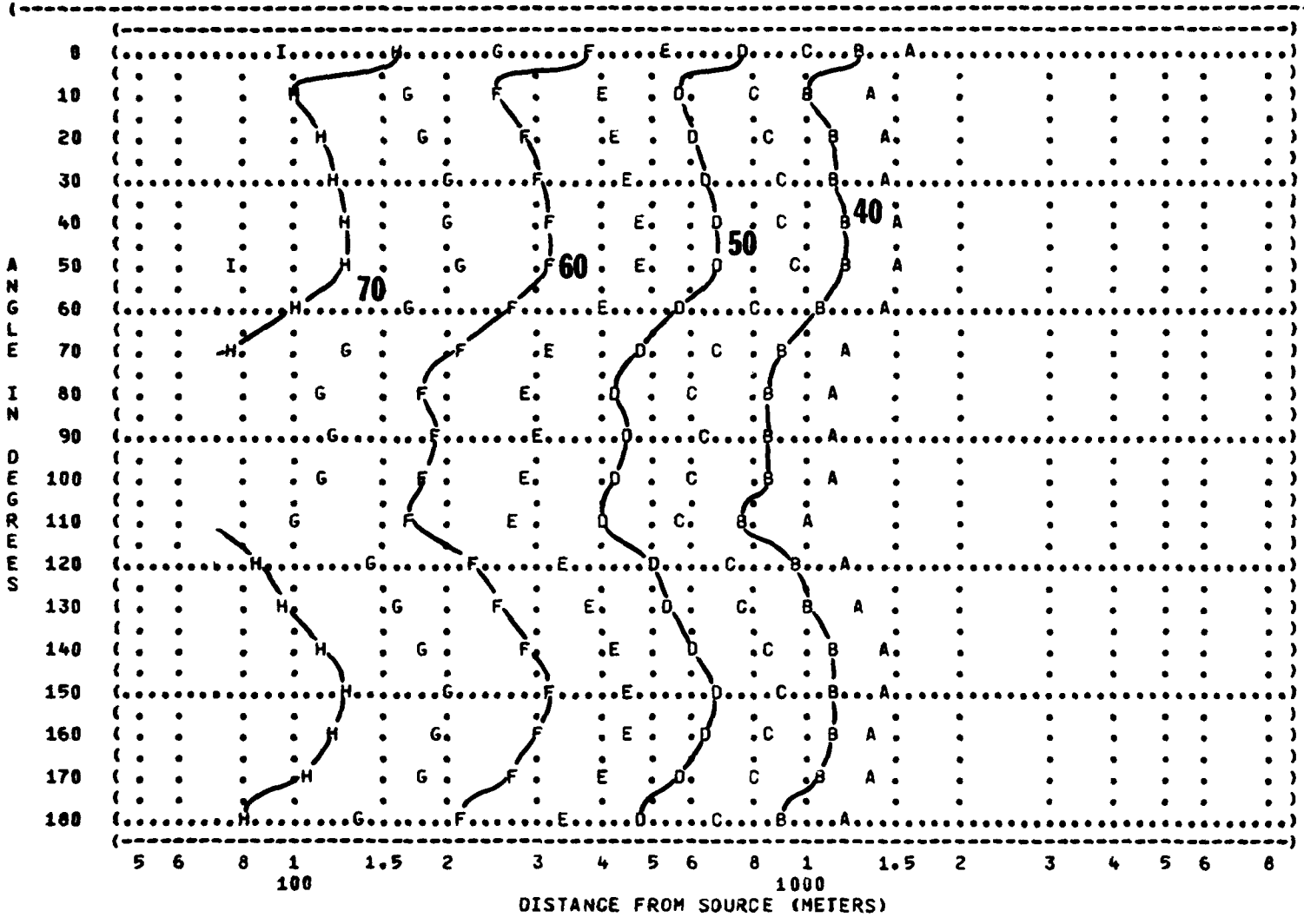


FIGURE: 10

SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
ENGINE RUNUP 85% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 01
14 SEP 78
PAGE 25

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |

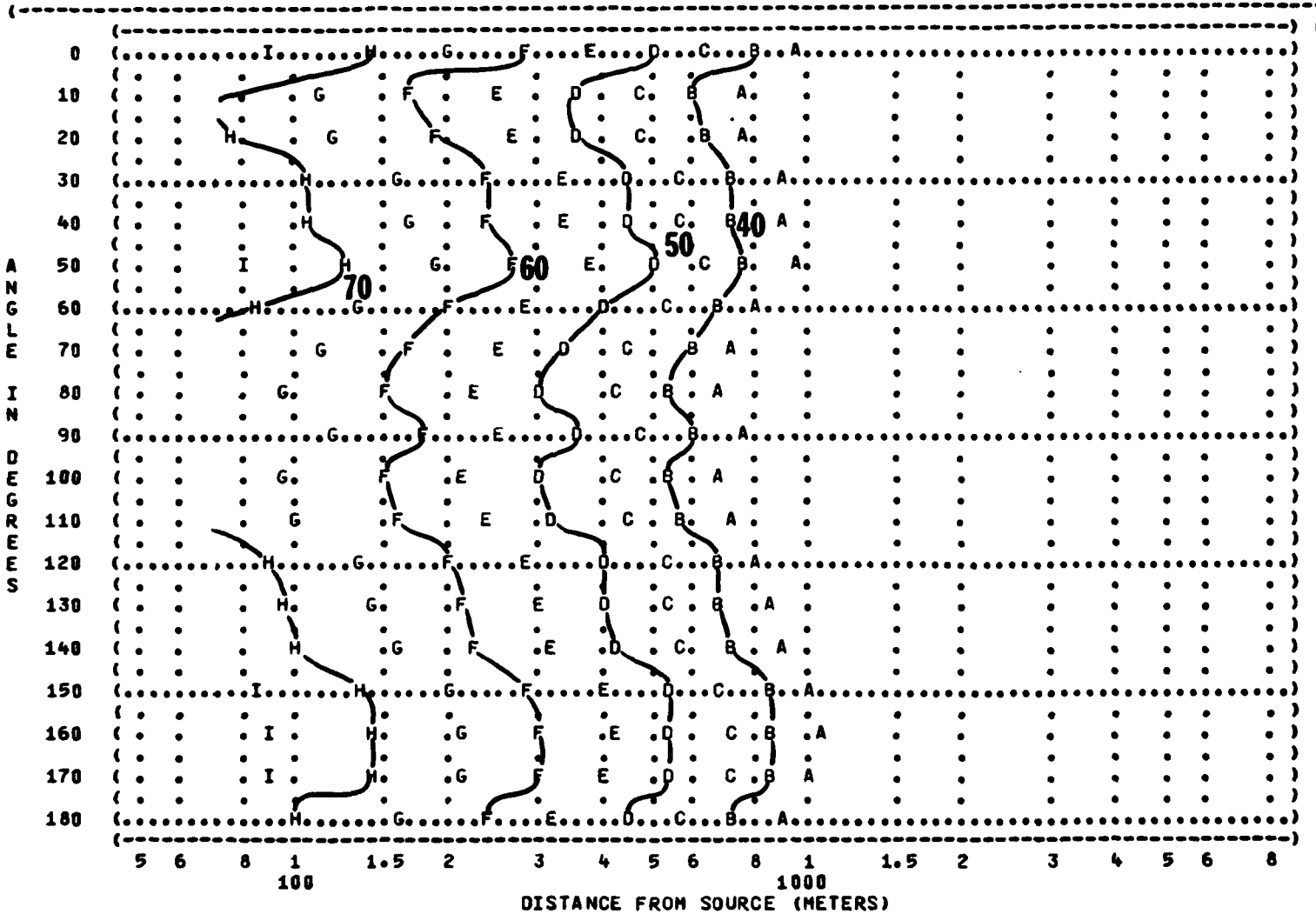


FIGURE 10 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 8000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
ENGINE RUNUP 85% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 01

14 SEP 78

PAGE 26

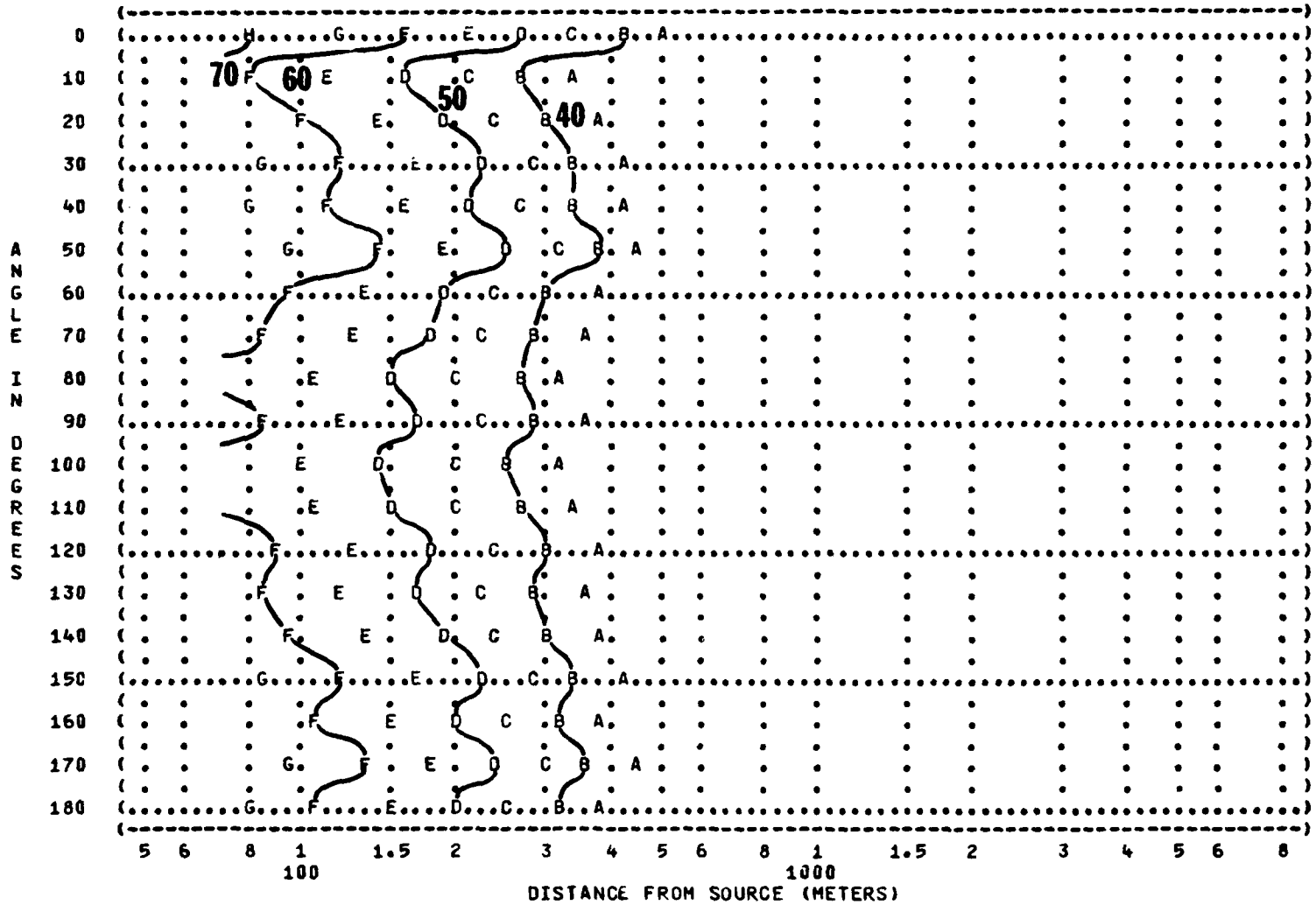


FIGURE: 10

SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
31.5 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 02

14 SEP 78

PAGE 18

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
MILITARY POWER 98.5% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

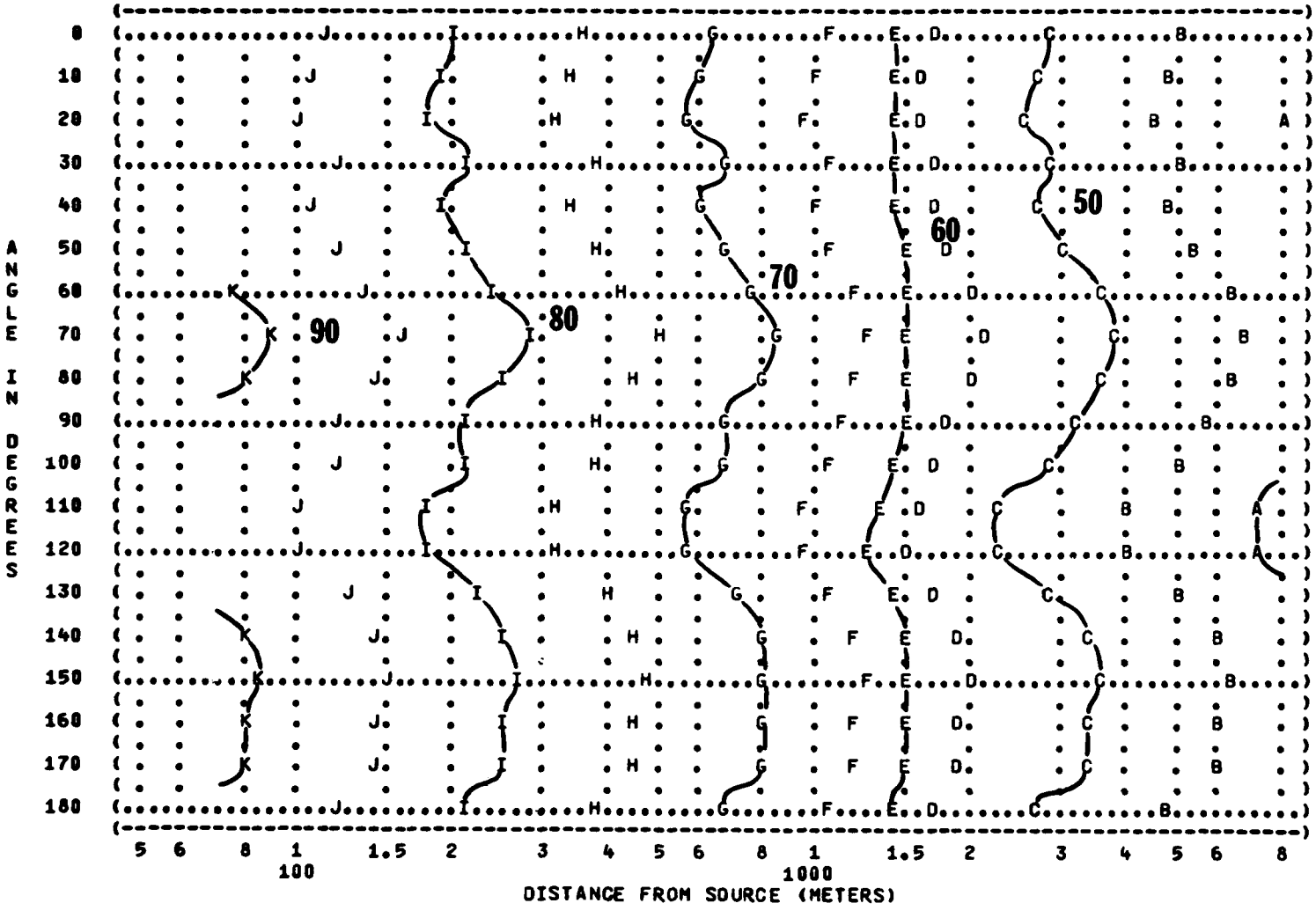


FIGURE 10: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

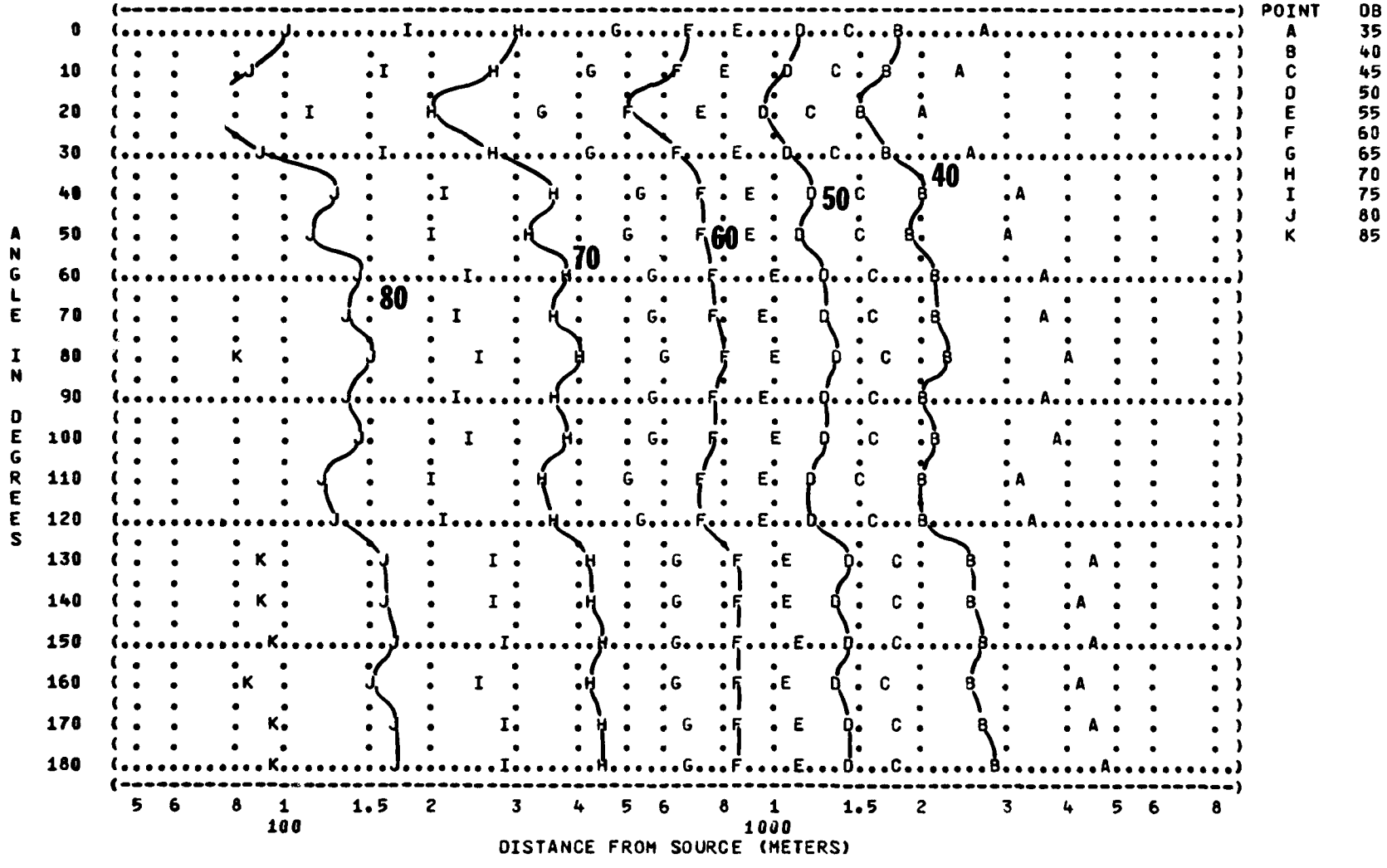
NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE AF32A-14 SUPPRESSOR ENGINE J79-GE-17 FAR FIELD NOISE

OPERATION:
MILITARY POWER 98.5% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 02
14 SEP 78






| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |

FIGURE 10: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE AF32A-14 SUPPRESSOR ENGINE J79-GE-17 FAR FIELD NOISE

OPERATION:
MILITARY POWER 98.5% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 02
14 SEP 78
PAGE 20

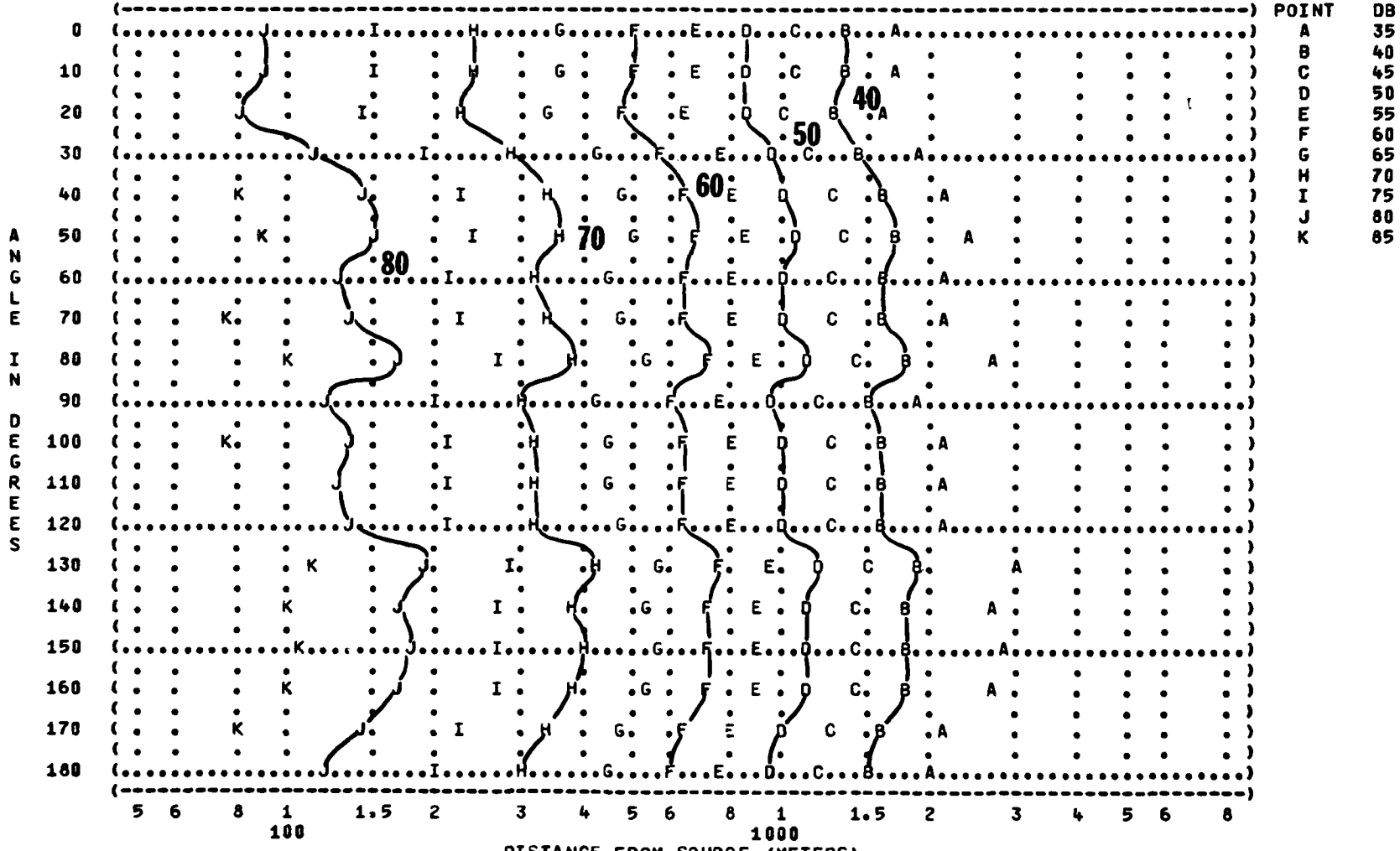


FIGURE: 10

SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
250 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

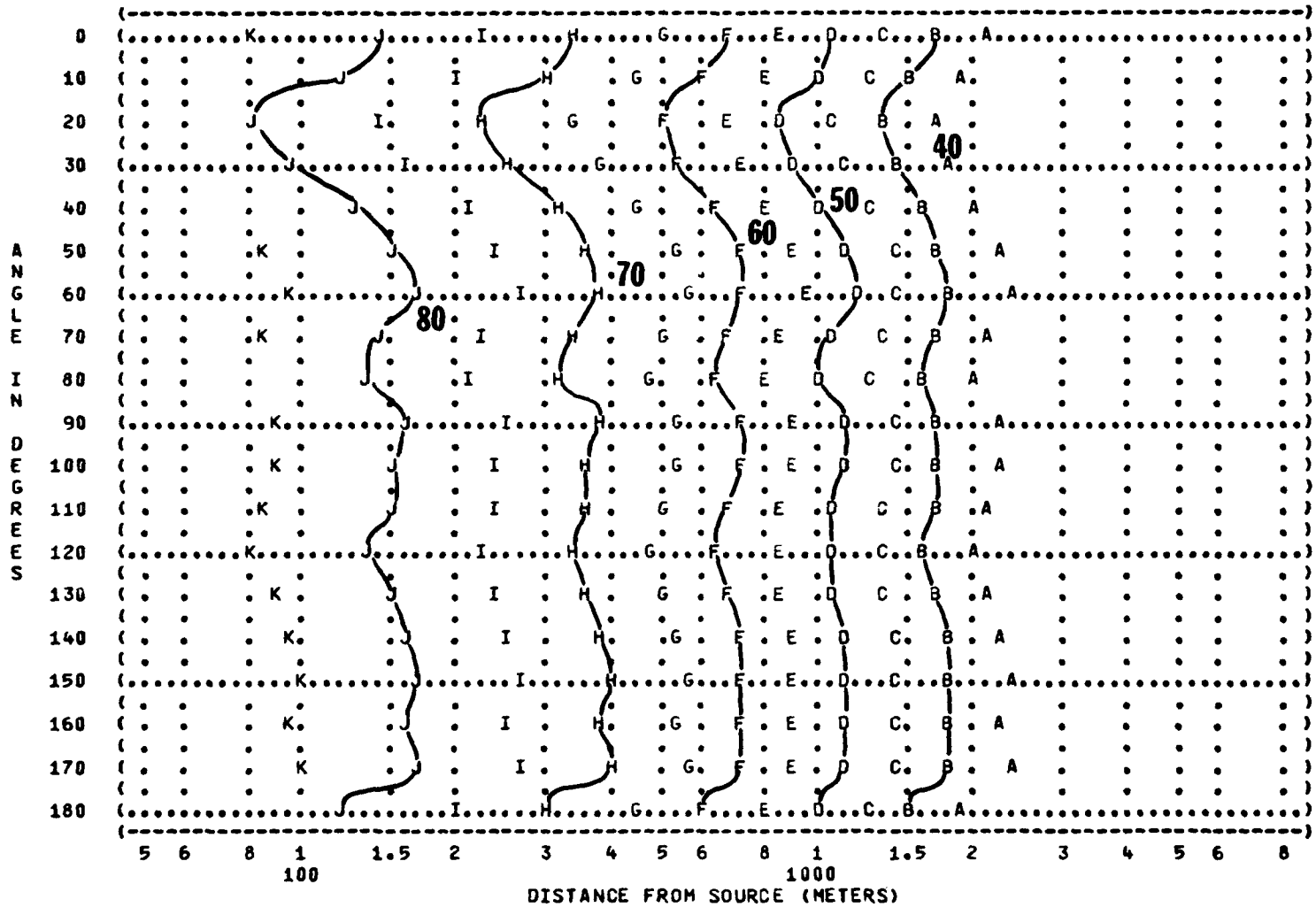
OPERATION:
MILITARY POWER 98.5% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 02

14 SEP 78

PAGE 21




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |

FIGURE 10: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 77-731-001 RUN 02 14 SEP 78 PAGE 22

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE AF32A-14 SUPPRESSOR ENGINE J79-GE-17 FAR FIELD NOISE

OPERATION:
MILITARY POWER 98.5% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

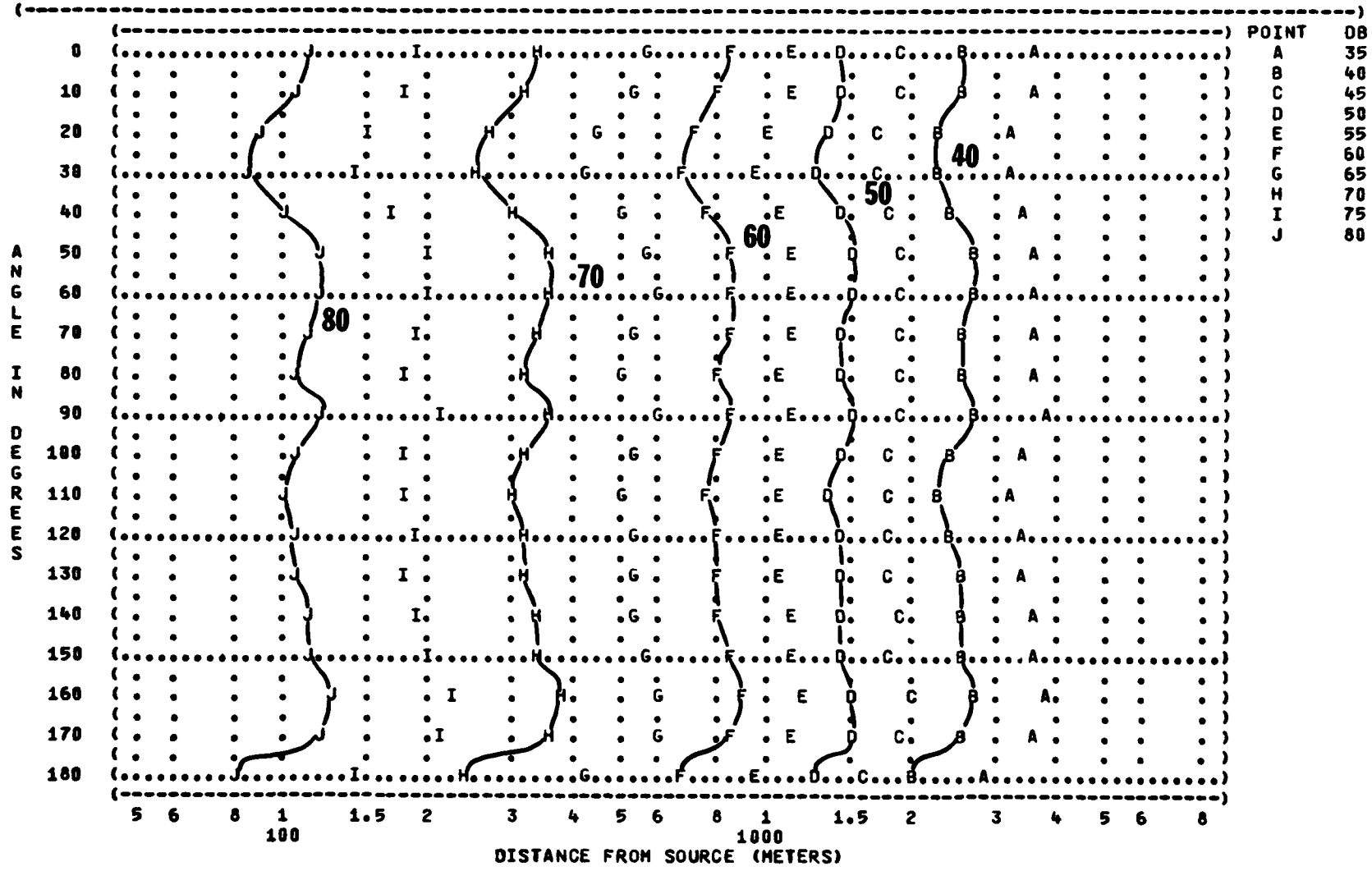


FIGURE: 10

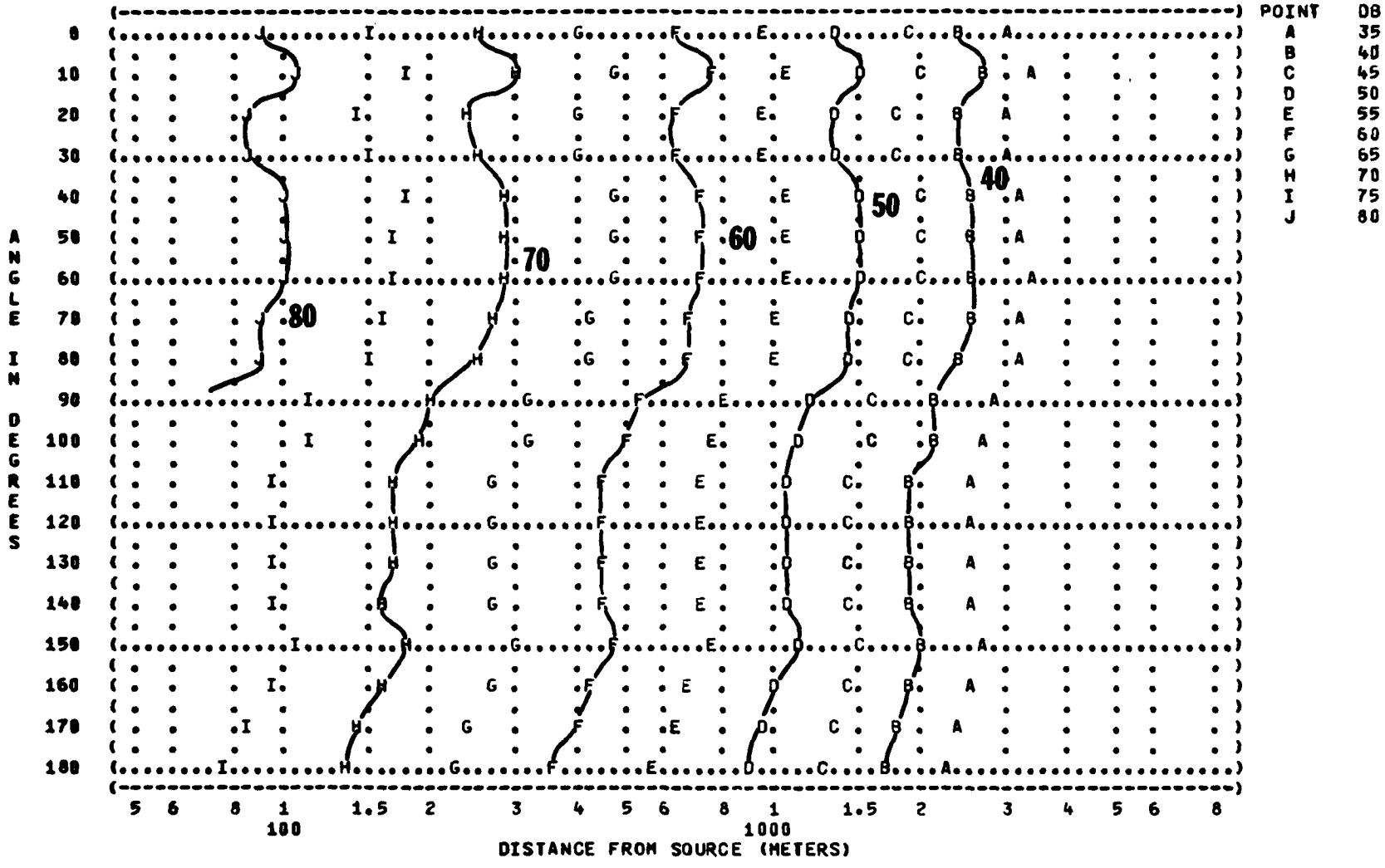
SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
1000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 02
14 SEP 78
PAGE 23

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
MILITARY POWER 98.5% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |

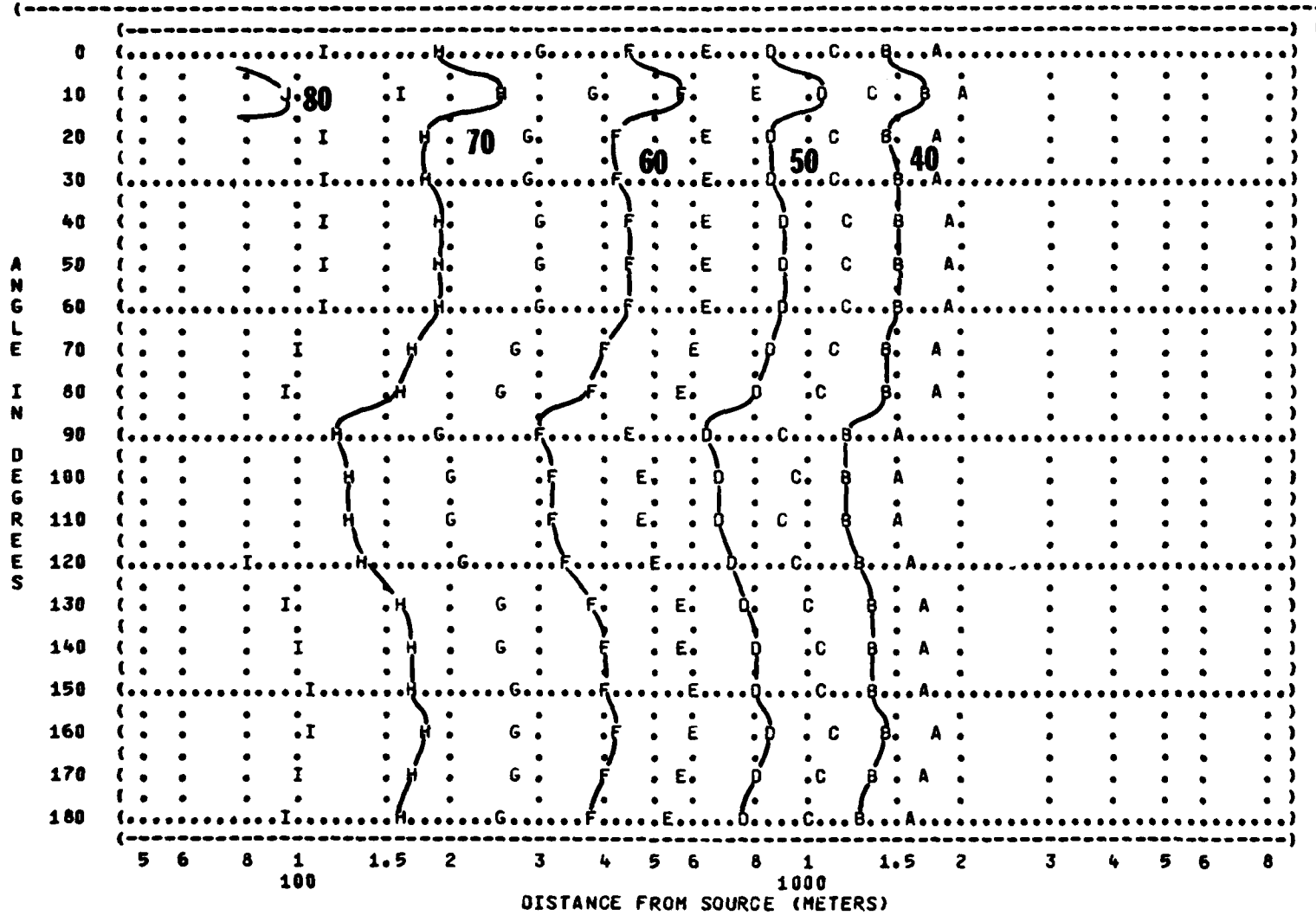
FIGURE 10: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
MILITARY POWER 98.5% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 02
14 SEP 78
PAGE 24




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |

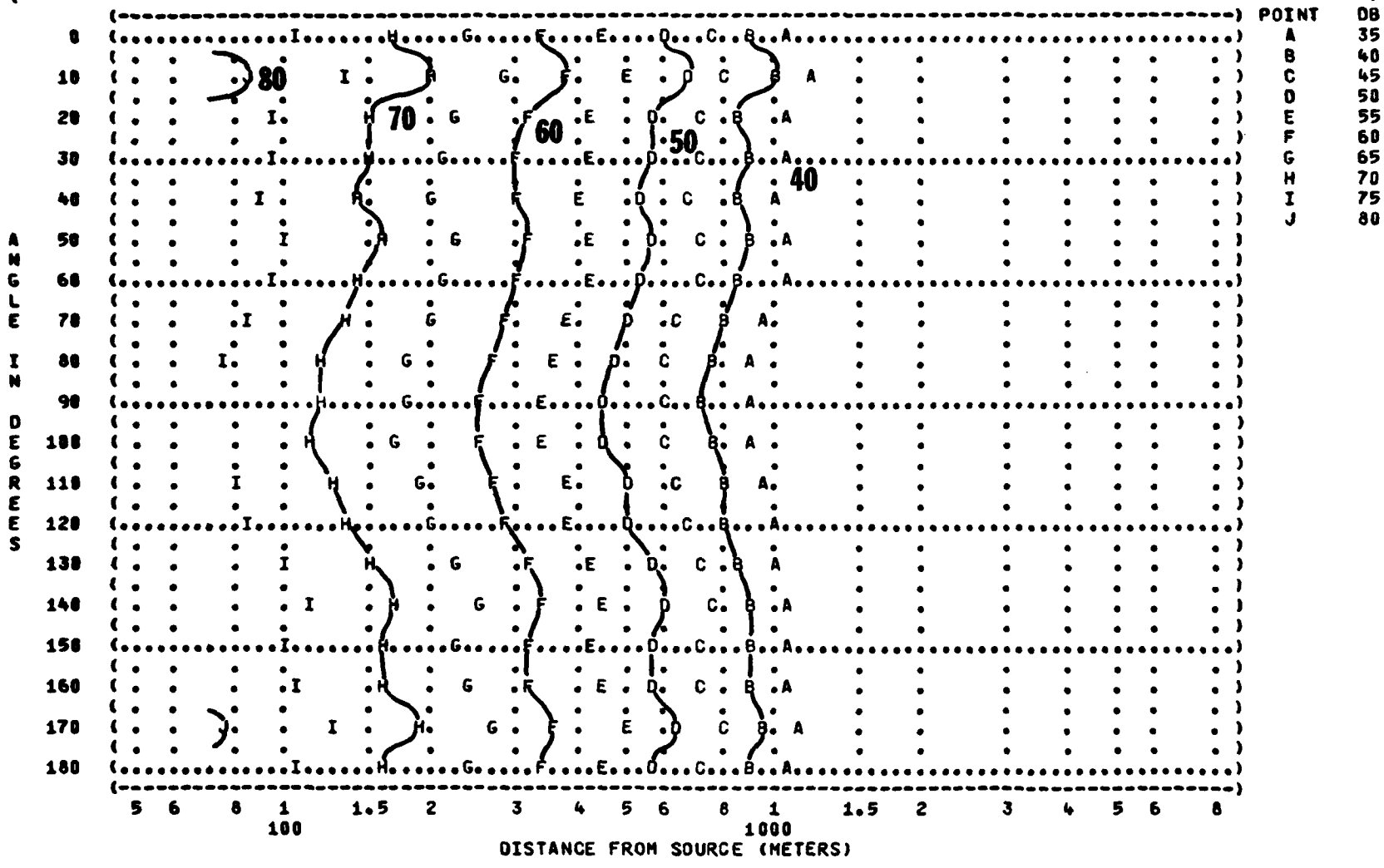
FIGURE 10: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 77-731-001 RUN 02 14 SEP 78 PAGE 25

NOISE SOURCE/SUBJECT: F-4 AIRCRAFT IN THE AF32A-14 SUPPRESSOR ENGINE J79-GE-17 FAR FIELD NOISE

OPERATION: MILITARY POWER 98.5% RPM SINGLE ENGINE GROUND RUNUP (SUPPRESSED)

METEOROLOGY: TEMP = 15 C BAR PRESS = .760 M HG REL HUMID = 70 %




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |

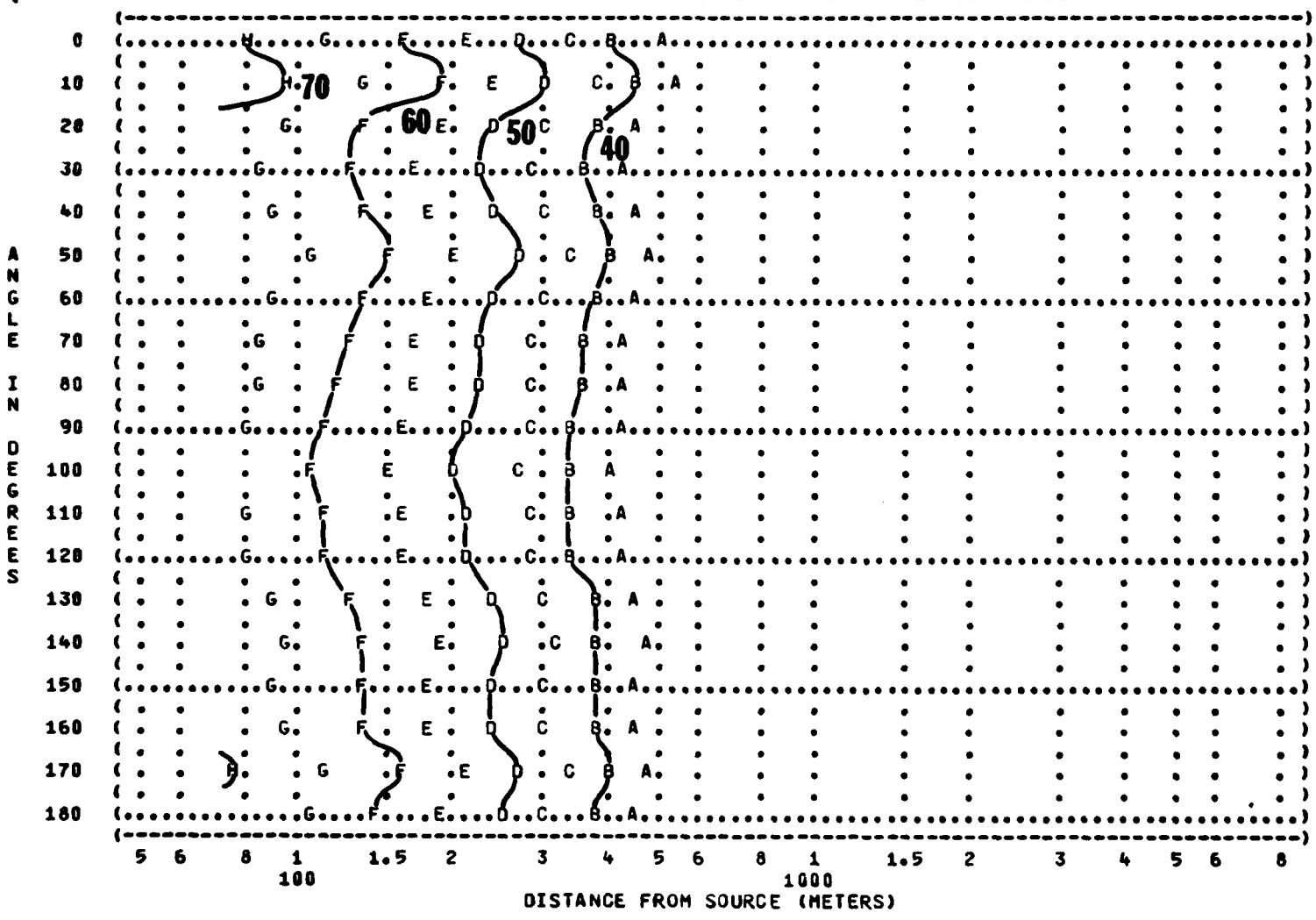
FIGURE 10: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 8000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
MILITARY POWER 98.5% RPM
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 02
14 SEP 78
PAGE 26




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |

FIGURE: 10

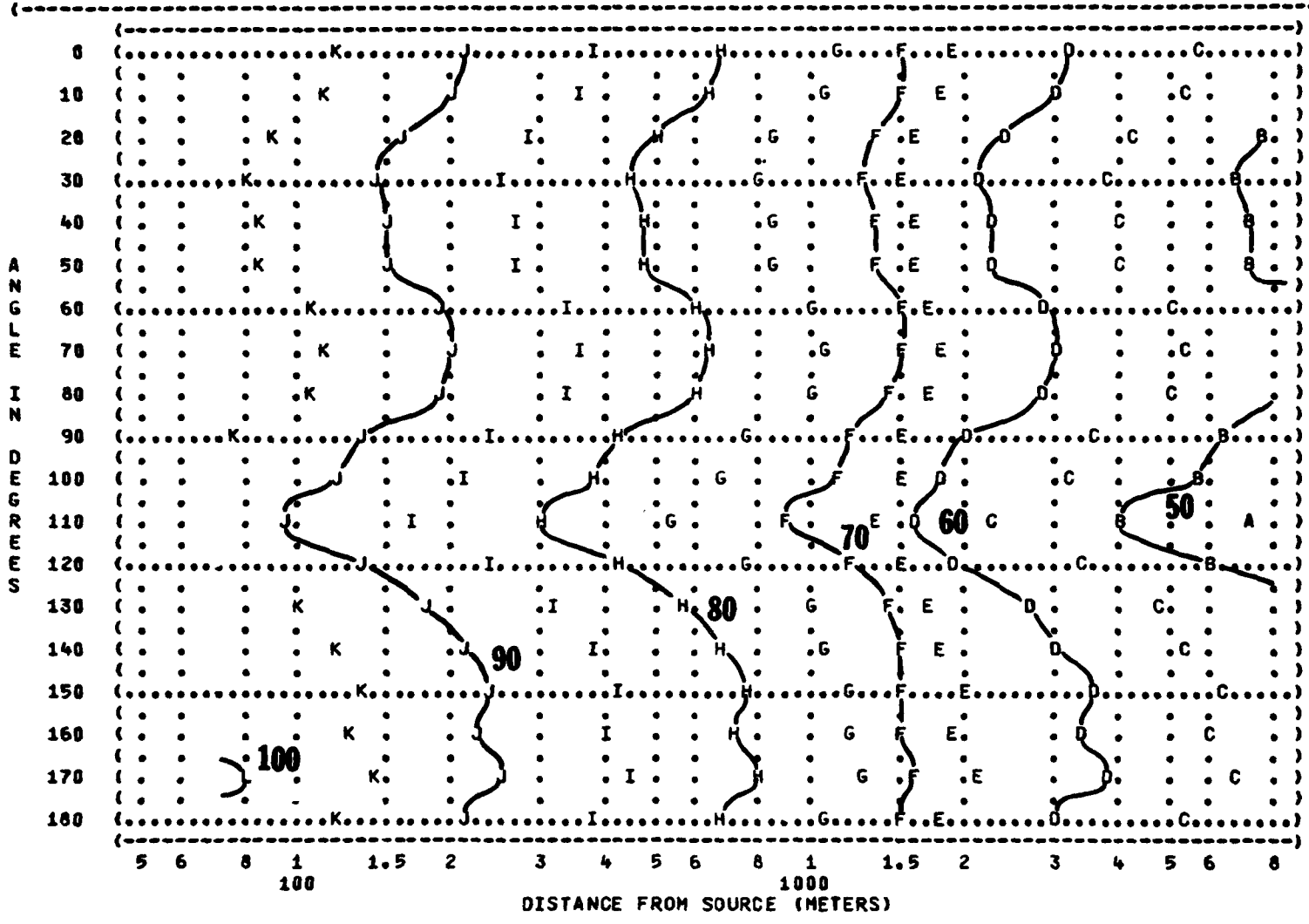
SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 03
14 SEP 78
PAGE 18




| POINT | DB |
|---|---|
| A | 45 |
| B | 50 |
| C | 55 |
| D | 60 |
| E | 65 |
| F | 70 |
| G | 75 |
| H | 80 |
| I | 85 |
| J | 90 |
| K | 95 |
| L | 100 |

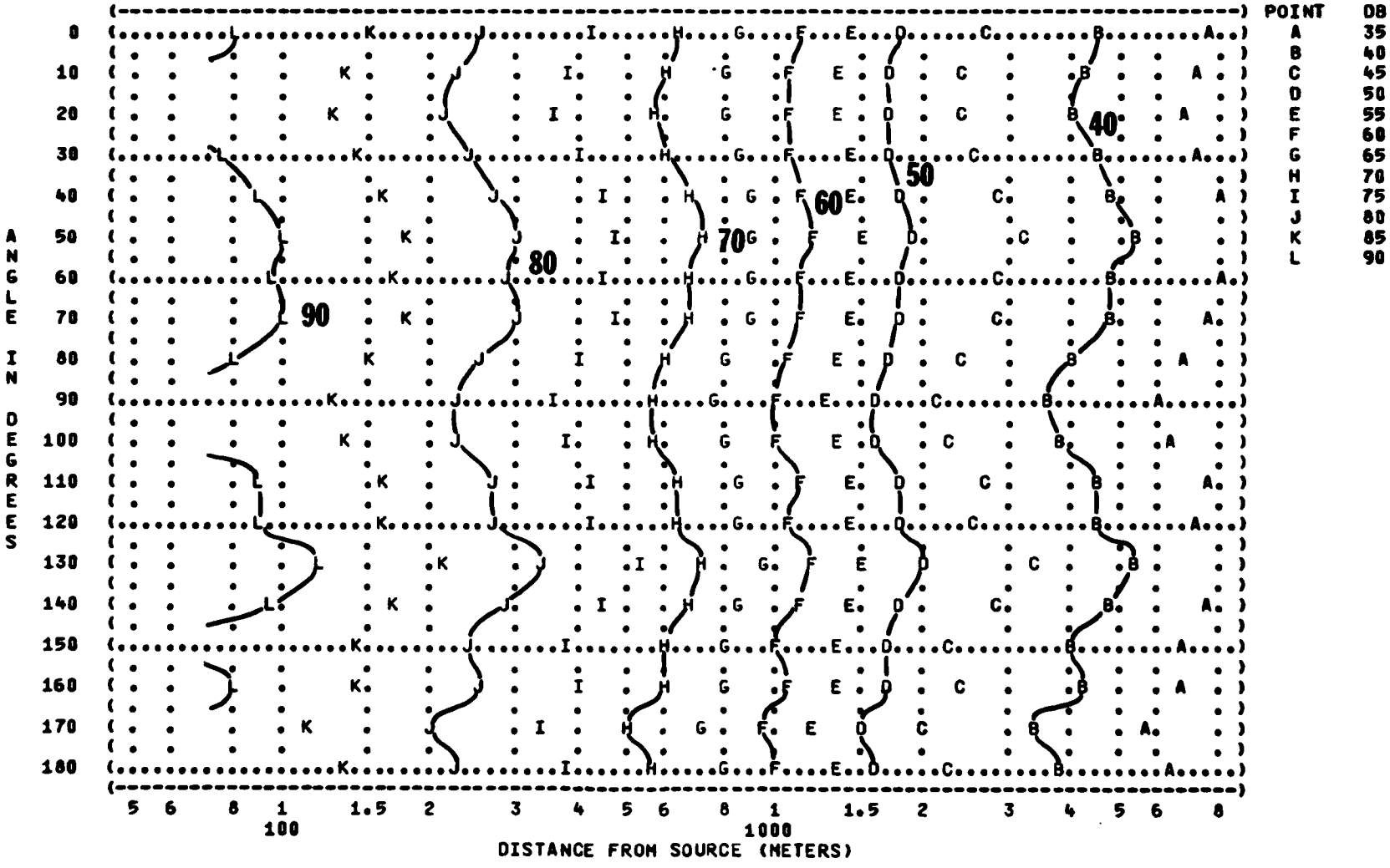
FIGURE: 10 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 03
14 SEP 78
PAGE 19

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |

FIGURE: 10

SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
125 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-801
RUN 03
14 SEP 78
PAGE 20

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |
| L | 90 |

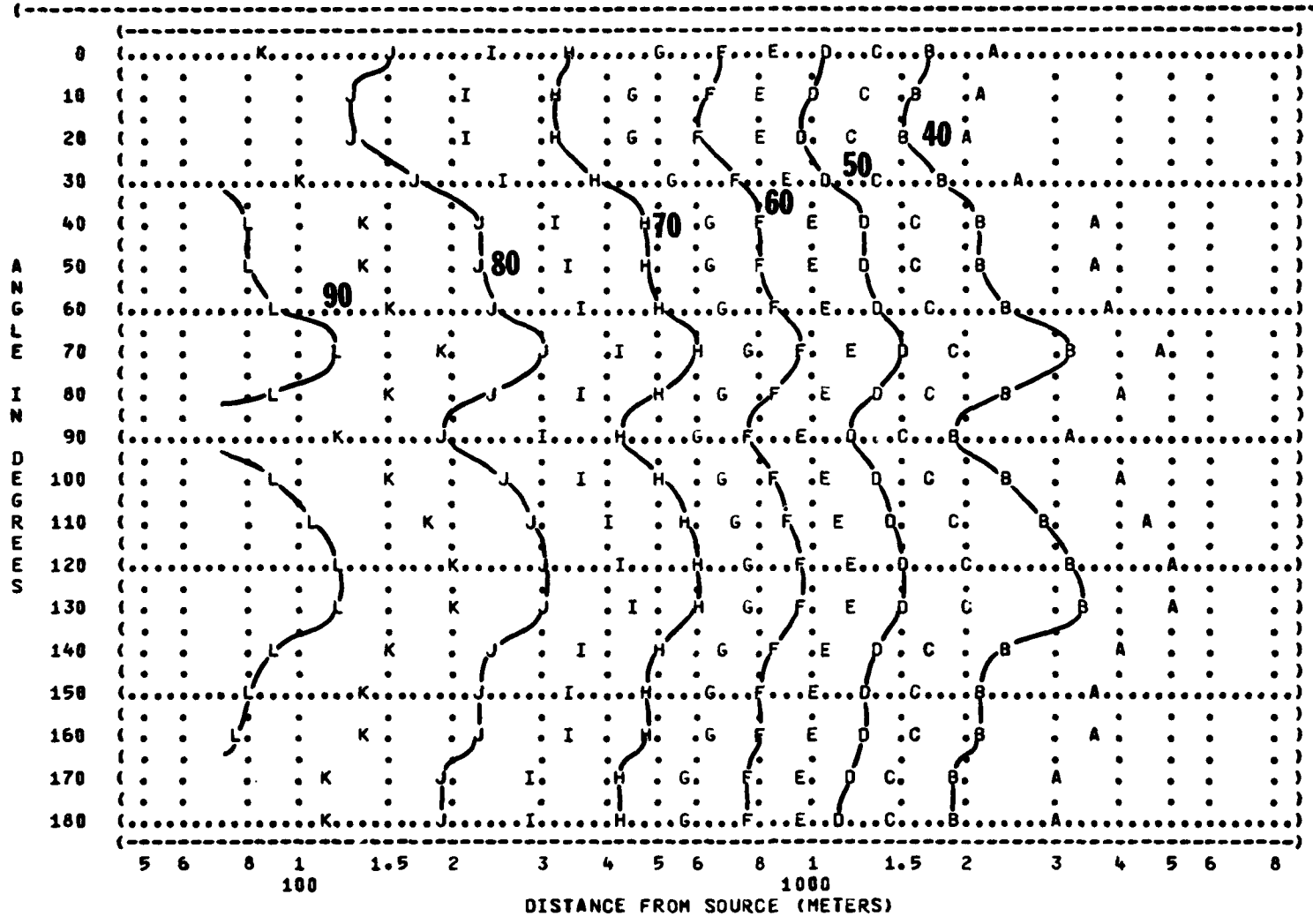


FIGURE: 10 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 250 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 03
14 SEP 78
PAGE 21

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

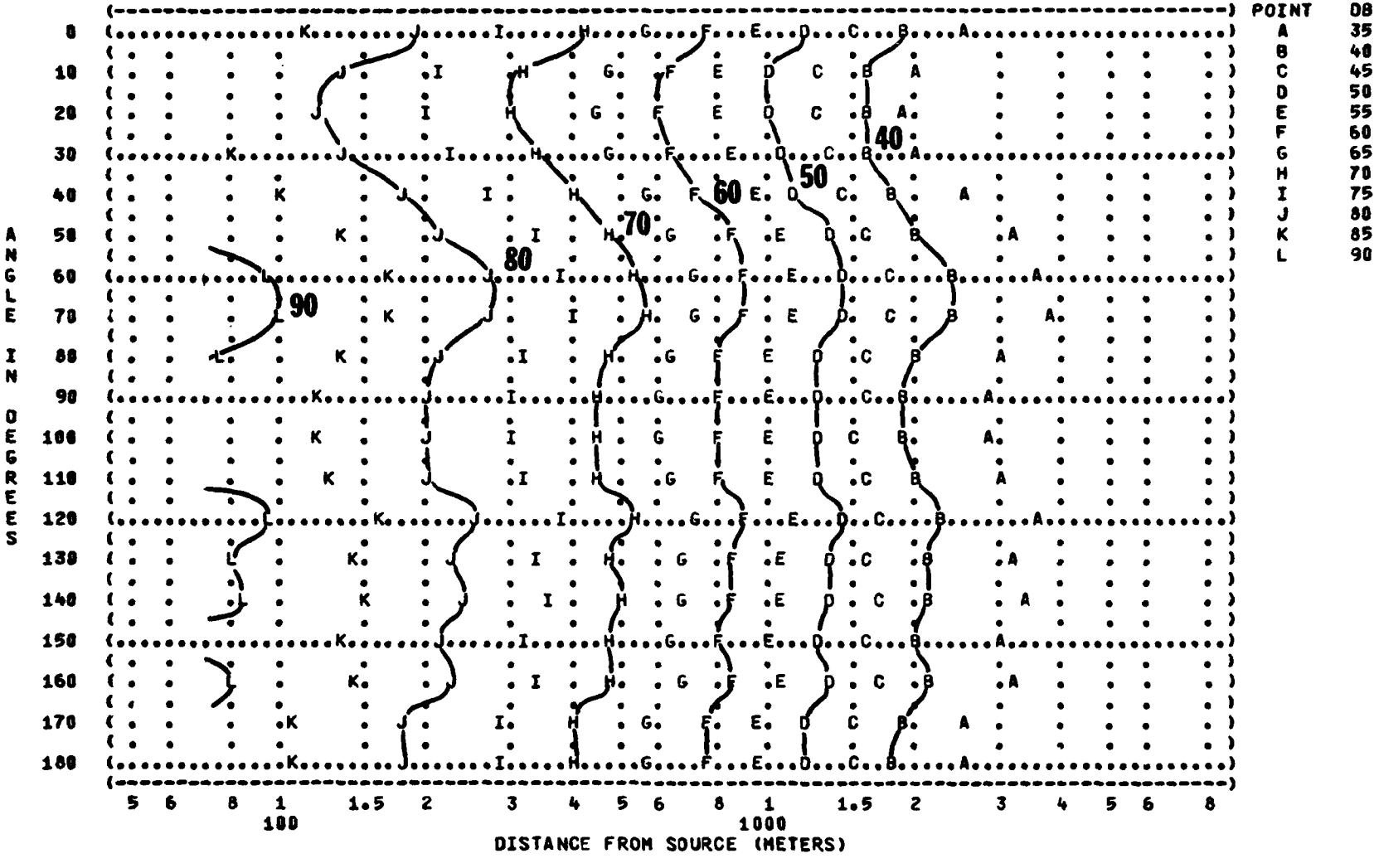


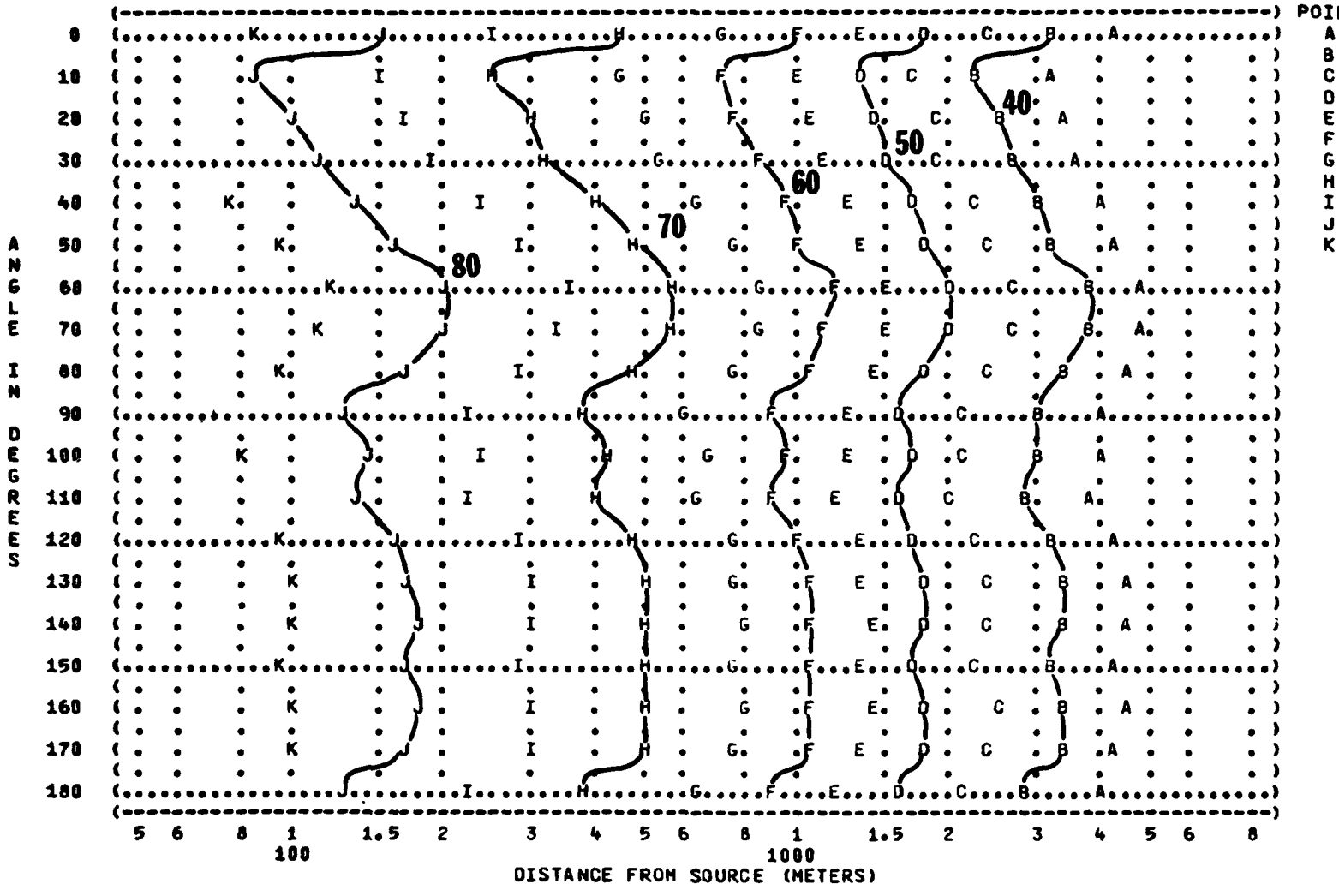
FIGURE 10: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT: F-4 AIRCRAFT IN THE AF32A-14 SUPPRESSOR ENGINE J79-GE-17 FAR FIELD NOISE

OPERATION: AFTERBURNER POWER, SINGLE ENGINE, GROUND RUNUP (SUPPRESSED)

METEOROLOGY: TEMP = 15 C, BAR PRESS = .760 M HG, REL HUMID = 70 %

IDENTIFICATION: OMEGA 1.4, TEST 77-731-001, RUN 03, 14 SEP 78, PAGE 22




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |

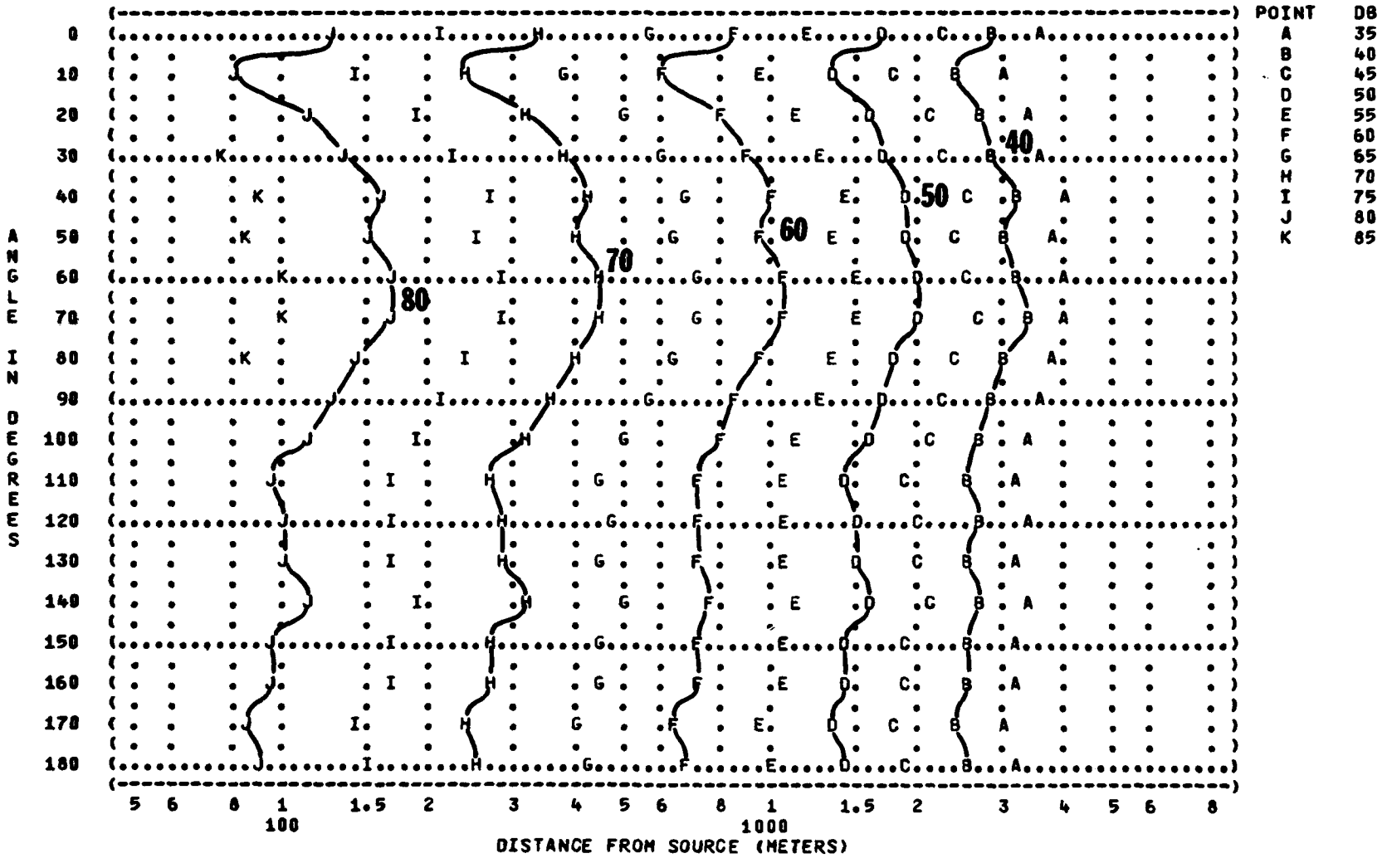
FIGURE: 10 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 03
14 SEP 78
PAGE 23

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |
| K | 85 |

FIGURE: 10

SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
2000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 03
14 SEP 78
PAGE 24

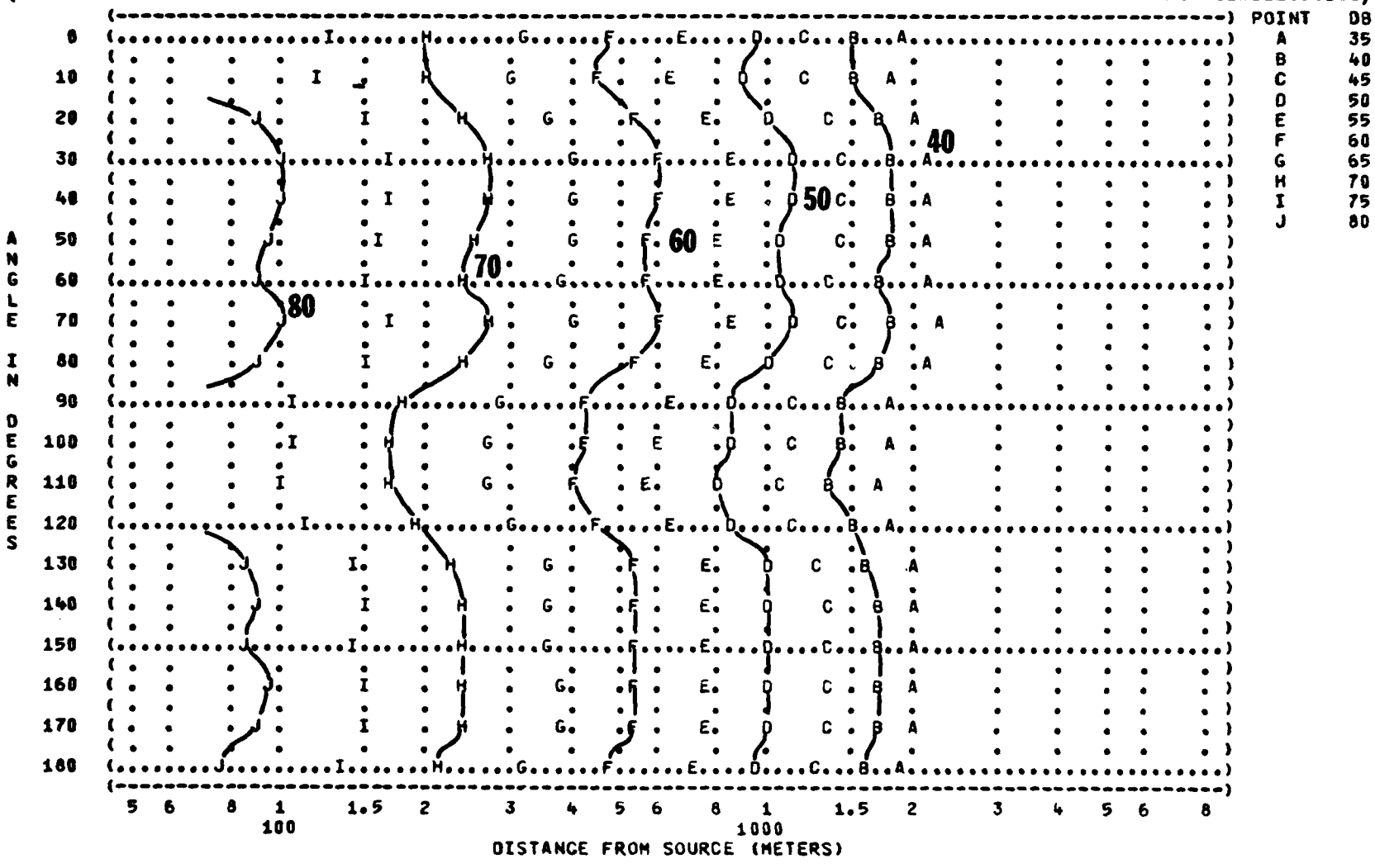


FIGURE: 10

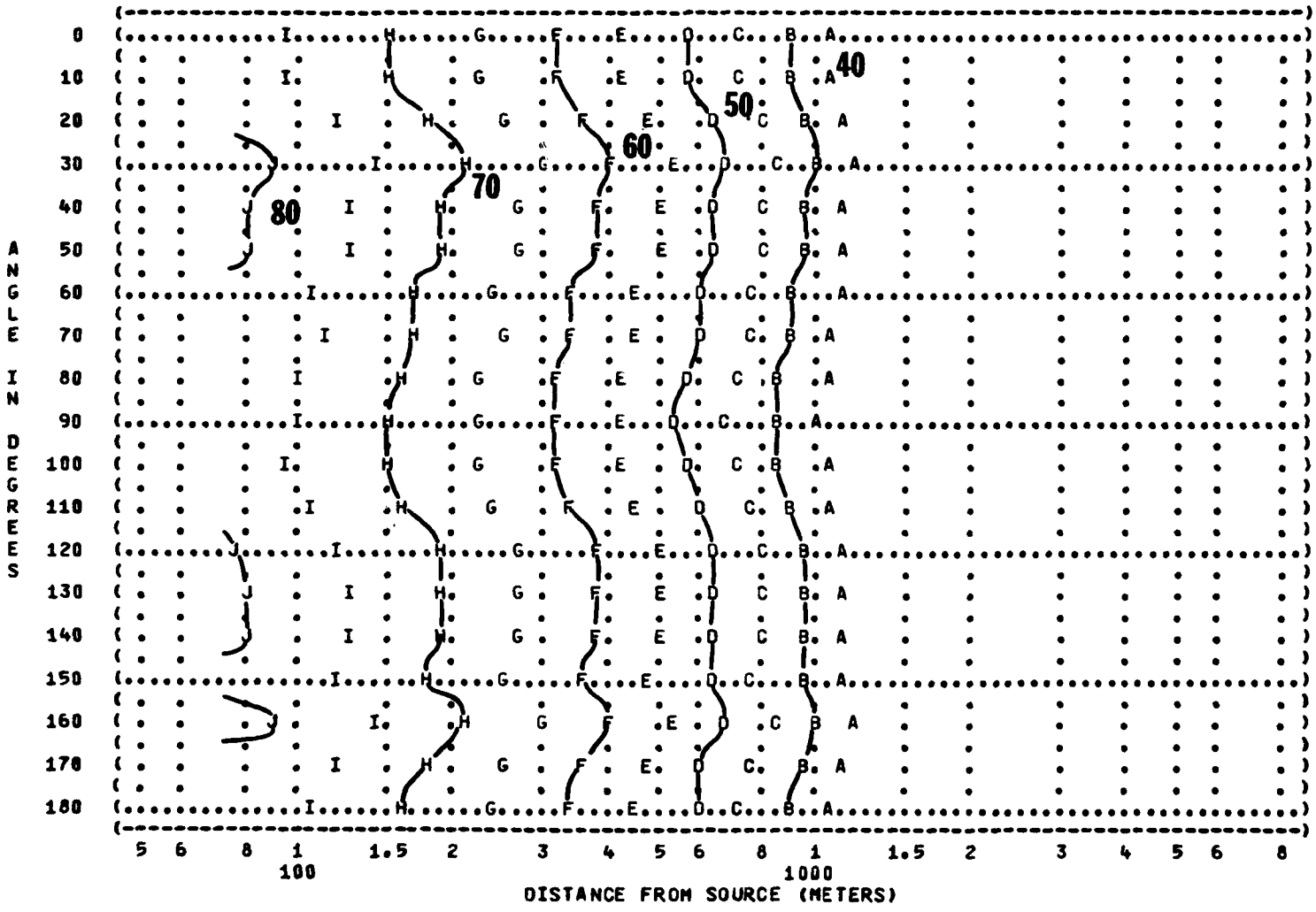
SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-4 AIRCRAFT IN THE
AF32A-14 SUPPRESSOR
ENGINE J79-GE-17
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
SINGLE ENGINE
GROUND RUNUP (SUPPRESSED)

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

IDENTIFICATION:
OMEGA 1.4
TEST 77-731-001
RUN 03
14 SEP 78
PAGE 25




| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |
| I | 75 |
| J | 80 |

FIGURE 10: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 8000 HZ OCTAVE BAND

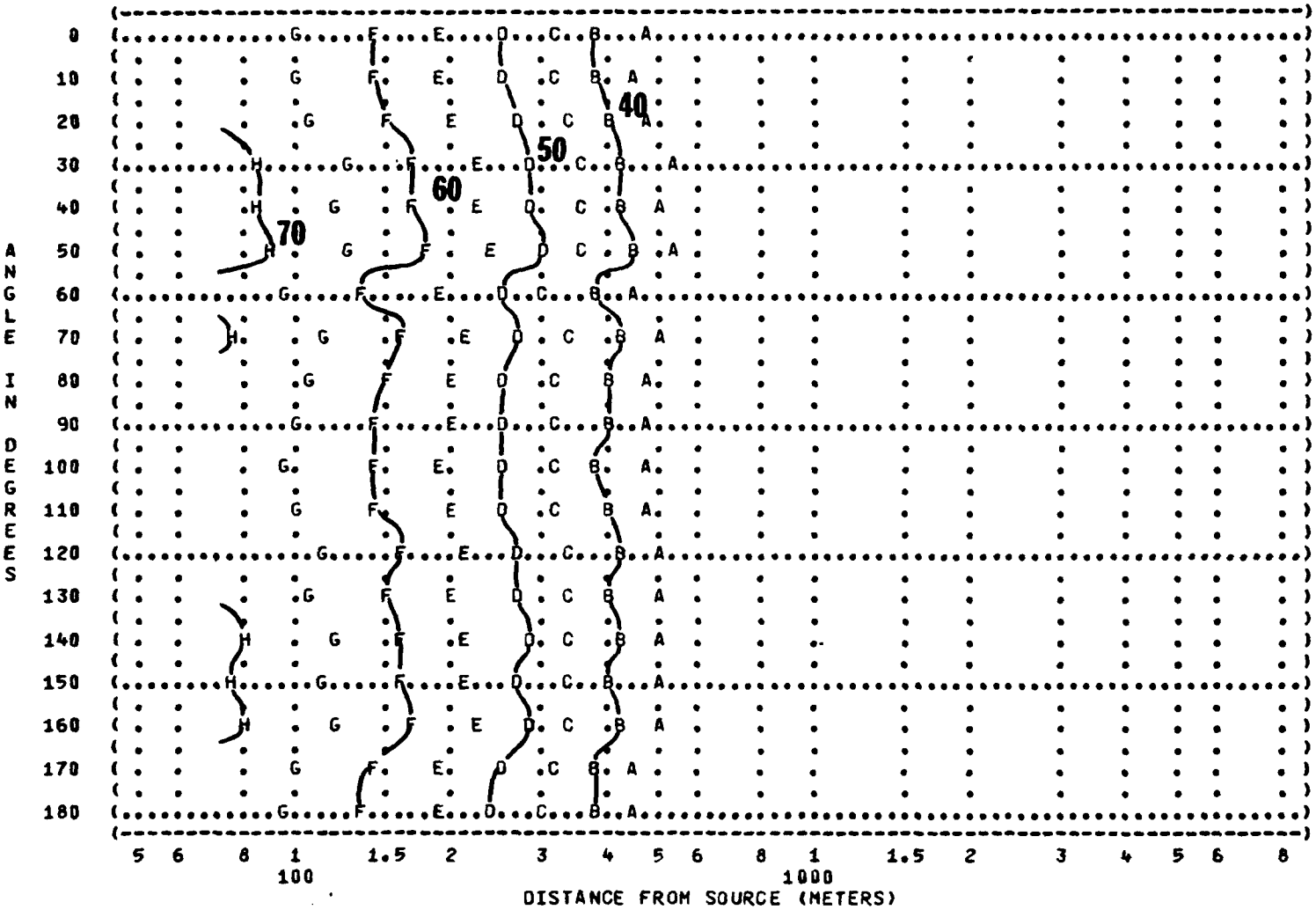
NOISE SOURCE/SUBJECT: F-4 AIRCRAFT IN THE AF32A-14 SUPPRESSOR ENGINE J79-GE-17 FAR FIELD NOISE

OPERATION: AFTERBURNER POWER, SINGLE ENGINE, GROUND RUNUP (SUPPRESSED)

METEOROLOGY: TEMP = 15 C, BAR PRESS = .760 M HG, REL HUMID = 70 %

IDENTIFICATION: OMEGA 1.4, TEST 77-731-001, RUN 03, 14 SEP 78, PAGE 26

| POINT | DB |
|---|---|
| A | 35 |
| B | 40 |
| C | 45 |
| D | 50 |
| E | 55 |
| F | 60 |
| G | 65 |
| H | 70 |

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